



ENGINEERING SOCIETY
UNIVERSITY of TORONTO
1945

FIFTY-NINTH EDITION

TRANSACTIONS
AND YEAR BOOK

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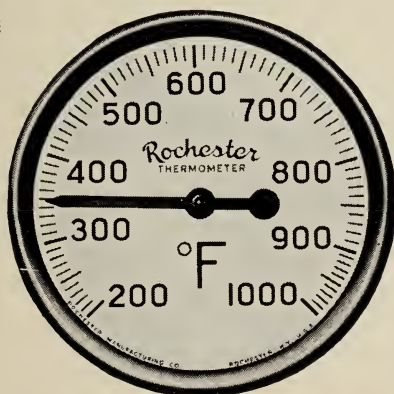
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THE ASSOCIATION of Professional Engineers of the Province of Ontario is constituted by the Legislature of the Province of Ontario to govern the practice of Engineering in this Province. In brief, no person is permitted to practise Engineering (with certain exemptions as defined in the Act) unless he is a registered Member or Licensee of the Association.

Registration can be obtained by graduates of the faculty of Applied Science and Engineering, University of Toronto, holding the Degree of Bachelor of Applied Science in Engineering, as soon as they are able to submit evidence of satisfactory practical experience.

Provision is made in the Act that an undergraduate may be recorded with the Association while attending University, thereafter, submitting annually information as to his standing and additional engineering experience. When he has acquired the necessary practical experience, he may then apply for final registration, which gives him the right to call himself a Professional Engineer and to practise Engineering. With the exception of persons exempted from the operation of the Act, no one may use the title, "Engineer" unless he is a Member or Licensee of the Association.

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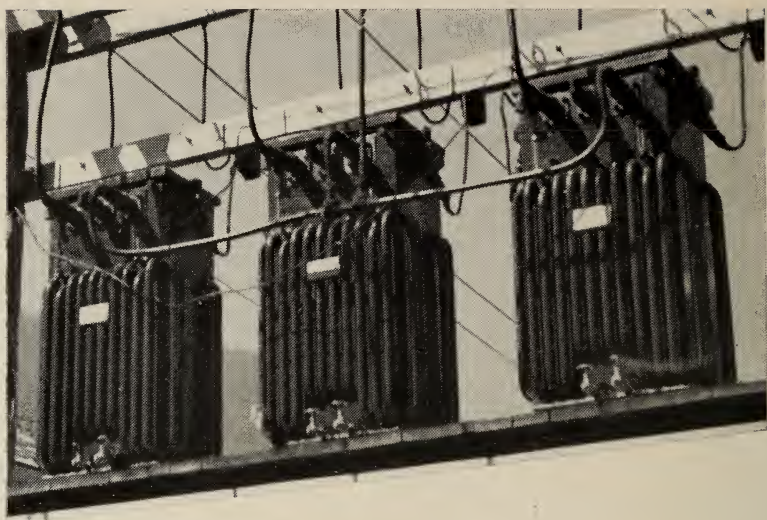
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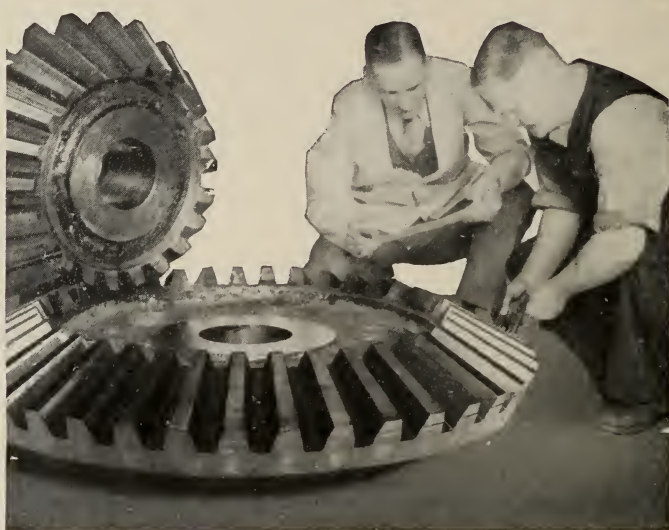
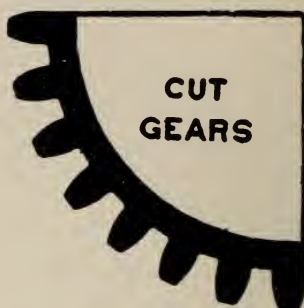


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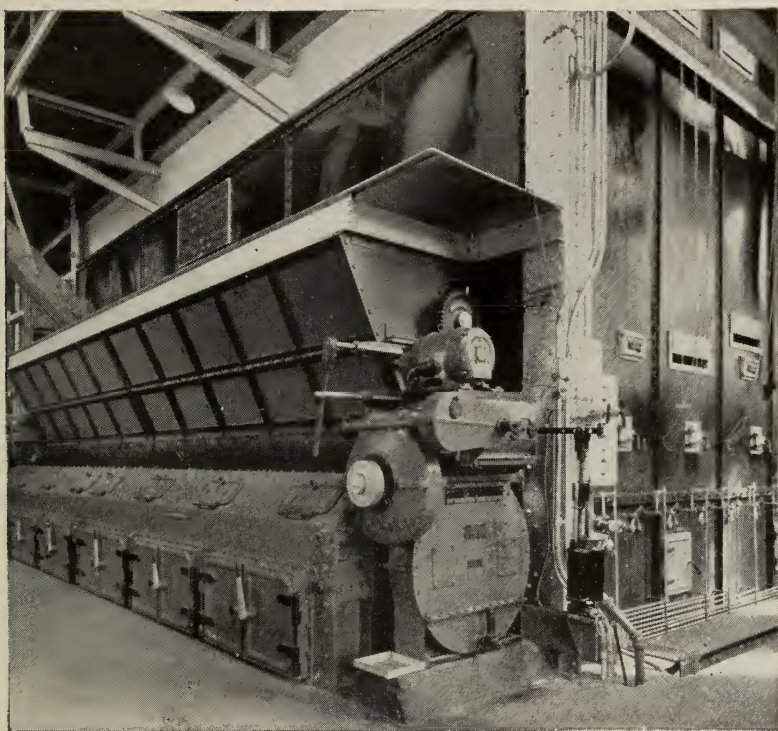
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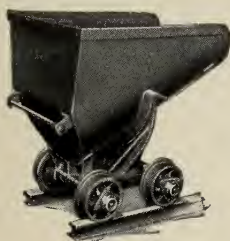
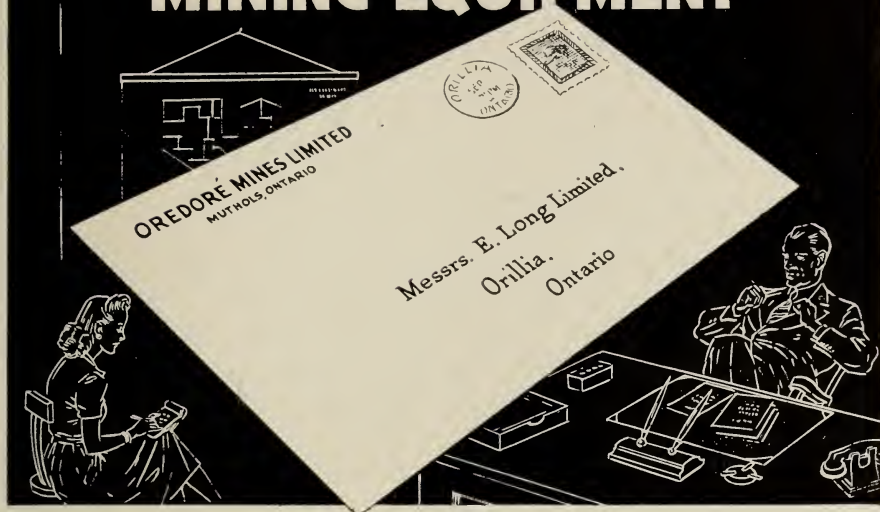
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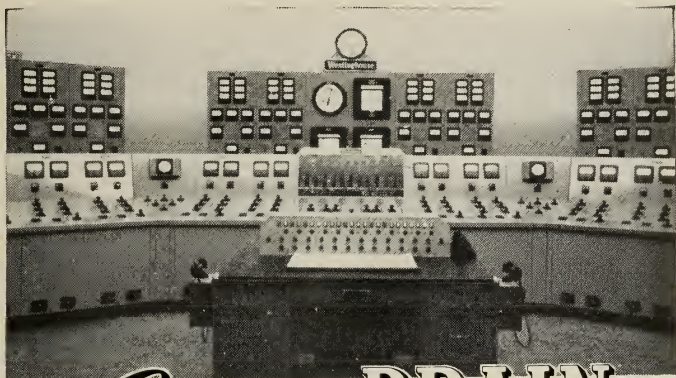
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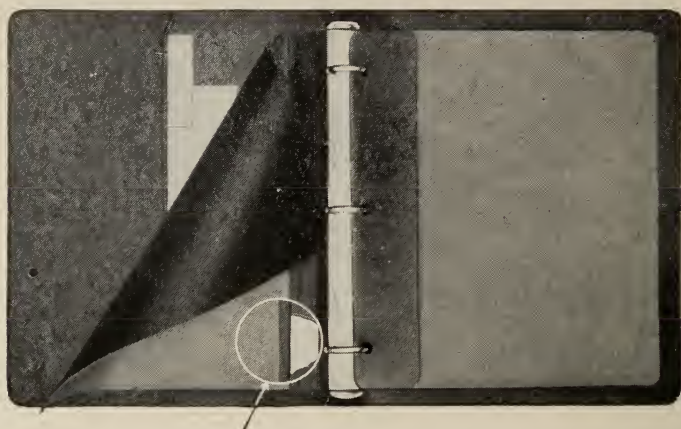
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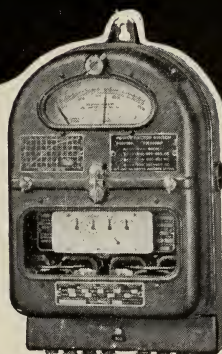
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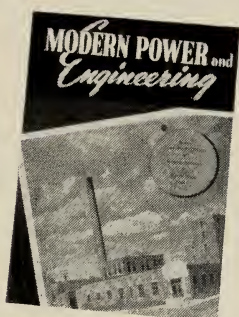
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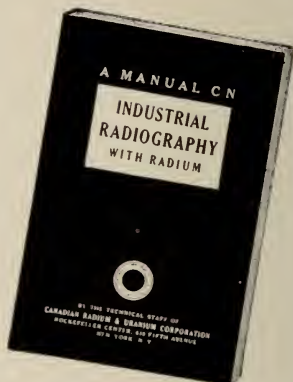
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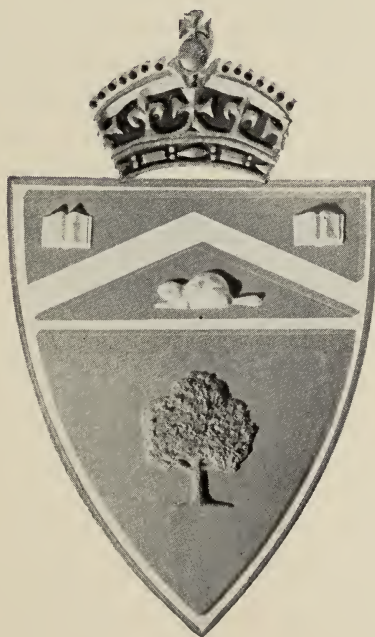
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Transactions and Year Book 1945



Engineering Society
The University of Toronto

Roll of Service

The Roll of Service compiled for the current edition of the *TRANSACTIONS AND YEAR BOOK* includes all those who graduated in the Class of 4T4, and all others who left School last year (Feb., 1944 - Feb., 1945) to join the Active Forces.

We wish to acknowledge the very kind co-operation of the Record's Office of the University of Toronto in making this compilation possible. To prevent further omissions, we would be very appreciative if men on active service, or their families, would keep in touch with the Record's Office.

CASUALTIES

Brown, A. G. S., Lieut., R.C.C.S., '43

Killed in action in Normandy August 8th, 1944.

Campbell, W. F., F.O., R.C.A.F., '39-'42

Killed in action on operations.

Clark, D. C. W., F.O., R.C.A.F., '39-'41

Now presumed dead.

Crysler, D. N., Sub. Lieut., R.C.N.V.R. (F.A.A.), '41-'42

Killed in flying accident in U.S.A., March 27th, 1943.

Doherty, L. A., F.O., R.C.A.F., '39-'40

Presumed dead after air operations over Bay of Biscay.

Cumming, G. T., Flight Engineer, R.C.A.F., '45

Killed on active service October 2nd, 1944.

Durbin, L., F.O., R.C.A.F.

Missing on air operations in September, 1944, now presumed dead.

Fleming, R., 2nd Lieut., B.N., Q.O.R.

Killed in action June 11th, 1944.

Gray, R. J., F.O., R.C.A.F.

Killed on active service July 4, 1944.

Hunter, C. H., W.O., R.C.A.F., '32-'35

Killed on active service February 20th, 1944.

Irwin, W. J., F.O., R.C.A.F.

Killed off coast of France July 30th, 1943.

Roll of Service

- Jardine, W. B., F.O., R.C.A.F., '43
Missing after air operations June 15th, 1944.
- Kent, H. K., Flight-Lieut., R.C.A.F., '44
Missing on air operations over Europe.
- MacDonald, H. R., Bombardier, R.C.A., '30-'31
Wounded in France July 13th, 1944 (died of wounds).
- Mason, P. B., Lieut., '44
Kings Own Scottish Borders— Missing since September 17th, 1944.
- McGill, G. E., Flight-Lieut., R.C.A.F., '36-'38
Shot in German Prison Camp, March, 1942.
- McMillan, J. P., Squadron Leader, R.C.A.F., '37
Missing July, 1943, now presumed dead.
- Morgan, P. H., Lieut., C.A.C., '36-'38
Killed in action in France, June 9th, 1944.
- Pepall, J. R., Major, R.C.A., '42
Died of wounds in Italy, October 21st, 1944.
- Richardson, W. T., Gunner, R.C.A., '40-'43
Killed in action in France, July 22nd, 1944.
- Rogers, W. P., Capt.
Missing in Italy, December 16th, 1944.
- Simm, S. S., Flight Sergt., R.C.A.F., '40
Missing over Germany, August 26th, 1944.
- Smith, E. W., F.O., R.C.A.F.
Missing January 14th, 1944.
- Smith, S. G., Lieut., 48th Highlanders
Killed in action, December 16th, 1944.
- Steeves, W. E. W., Lieut., C.A.C., '41
Killed in action in Italy, July 1st, 1944.
- Williamson, G. L., Lieut., R.C.E.
Prisoner of war in Germany, August 7th, 1944.
- Williamson, R. O. B., Lieut., 48th Highlanders
Killed in action in Italy, December 17th, 1944.
- Wilson, A. M., Flight Sergt., R.C.A.F., '44
Missing after air operations.

Roll of Service

ROLL OF SERVICE



Allin, A. D.	R.C.E.
Andrews, F. M.	Sto. 2nd, R.C.N.V.R.
Andrews, C. H.	R.C.A.F.
Askin, A. R.	N.A. 2nd, F.A.A., R.N.
Aspinall, R. H., '44	Sub. Lieut., R.C.N.V.R.
Austin, R. E., '44	2nd Lieut., R.C.O.C.
Baines, H. R.	C.I.C.
Baker, D. W.	A/L. A., F.A.A., R.N.
Ball, W. F. G., '44	Lieut., R.C.E.
Ballinger, F. S., '44	Sub. Lieut., R.C.N.V.R.
Bauckham, B. P.	A.C. 2, R.C.A.F.
Belford, R. B., '44	R.C.E.
Bell, F. A.	Sub. Lieut., R.C.N.V.R.
Beringer, M. S.	U.S. Army
Berman, J., '44	Sub. Lieut., R.C.N.V.R.
Berrin, H., '44	R.C.O.C.
Bishop, C. F.	R.C.A.F.
Bobbie, W.	C.A. Course
Bradley, W. L., '44	Lieut., R.C.E.
Brazeau, J. A.	A.C. 2, R.C.A.F.
Brokenshire, W. H.	R.C.A.F.
Brooks, P. M.	R.C.N.V.R.
Bruce, G. J.	R.C.A.F.
Brown, J. A.	R.C.N.V.R.
Brownridge, R. G.	C.A. Course
Brownridge, A.	Sub. Lieut., R.C.N.V.R.
Bunnell, A. E. K.	R.C.N.V.R.
Bush, O. F.	R.C.N.V.R.
Carlyle, R. T.	R.C.A.F.
Carson, J. H., '44	2nd Lieut., R.C.E.M.E.
Cavanagh, J. R., '44	Lieut., R.C.E.
Caverly, D. S., '44	Lieut., R.C.E.
Charde, W. C.	R.C.A.F.
Cherry, H. J., '44	R.C.E.
Church, G. S.	F.A.A., R.N.
Clark, R. M., '44	Sub. Lieut., R.C.N.V.R.
Clarkson, J. D.	R.C.N.V.R.
Collins, J. J.	C.I.C.

Roll of Service

Conley, H. W.	O/S.M.M., R.C.N.V.R.
Cooke, D. H.	R.C.O.C.
Corkery, J. C.	R.C.A.F.
Coulter, K. R., '44	Lieut., R.C.A.
Coupland, S. C., '44	O/S.M.M., R.C.N.V.R.
Cowan, B.	
Cragg, P. S.	R.C.A.F.
Crawford, G. B., '44	Lieut., R.C.E.
Cringan, R. J.	C.I.C.
Currie, I. R., '44	Lieut., R.C.E.
Curzon, O. M.	R.C.N.V.R.
Cutt, J. C.	R.C.A.F.
Dempster, J. H., '44	Lieut., R.C.C.S.
Dewhurst, J. B., '44	Lieut., R.C.O.C.
Deyell, R. V.	O/S.M.M., R.C.N.V.R.
Diak, W. V.	R.C.N.V.R.
Dickson, E. R.	R.C.E.M.E.
Donnelly, J. J. J.	R.C.A.F.
Duckworth, D. H.	R.C.N.V.R.
Eagles, B. W.	R.C.N.V.R.
Ewing, T. A.	R.C.N.V.R.
Fairgrieve, D. T.	R.C.C.S.
Featherstone, D. L.	R.C.E.
Ferguson, J. M.	R.C.E.
Fraser, J. L., '44	Sub. Lieut., R.C.N.V.R.
Fraser, J. D.	R.C.N.V.R.
Frost, E. V.	R.C.O.C.
Gardner, W. S.	C.A. Course
Gibbin, G.	R.C.N.V.R.
Gilbert, B. W.	R.C.N.V.R.
Gladney, W. E., '44	Lieut., R.C.E.
Goering, J. W. L.	C.I.C.
Goldstick, W. J., '44	Lieut., R.C.E.
Goodhead, E. A.	R.C.O.C.
Gordon, B.	R.C.E.
Gorman, A. H., '44	Lieut., R.C.E.
Govan, W. W. L.	R.C.E.M.E.
Graham, H. E., '44	Lieut., R.C.E.M.E.
Gray, J. C.	R.C.N.V.R.
Grisdale, H. G., '44	Lieut., R.C.O.C.
Gross, M. M., '44	R.C.O.C.



Roll of Service



Grow, W. A.	R.C.E.
Hamilton, R. G., '44.	2nd Lieut., R.C.E.
Hamilton, J. S.	R.C.E.
Hamilton, L.	F.A.A., R.A.
Hannon, M. S., '44.	
Harris, D. W.	R.C.A.
Harvey, A. '44.	Sub. Lieut., R.C.N.V.R.
Harvey, J. T., '44.	2nd Lieut., R.C.E.M.E.
Hattin, J. S.	N.A. 2, F.A.A., R.N.
Hayman, J. A., '44.	Lieut., R.C.E.
Haynes, B. J., '44.	2nd Lieut., R.C.E.
Henderson, H. H.	
Henderson, R. L.	2nd Lieut., R.C.C.S.
Hepburn, D.	2nd Lieut.
Hewes, F. W., '44.	Lieut., R.C.E.
Hillmer, C. C.	R.C.A.S.C.
Hipwell, R. W., '44.	R.C.C.S.
Hirst, W. L. R., '44.	Sub. Lieut., R.C.N.V.R.
Hogg, W. J., '44.	2nd Lieut., R.C.E.
Holden, A. H.	R.C.N.V.R.
Holmes, T. F., '44.	R.C.E.M.E.
Hopkins, C. H., '44.	2nd Lieut., R.C.C.S.
Jackson, R. W., '44.	Sub. Lieut., R.C.N.V.R.
Johnson, D. S., '44.	Sub. Lieut., R.C.N.V.R.
Kahn, F. L.	N.A. 2, F.A.A., R.N.
Kaye, P., '44.	Lieut., R.C.C.S.
Keller, H. B.	S. M.M., 1st C., U.S.N.
Kelly, D. H.	R.C.C.S.
Kelly, P. B., '44.	R.C.E.M.E.
Kent, S. R., '44.	Lieut., R.C.E.
Ketola, J. A., '44.	Sub. Lieut., R.C.N.V.R.
Kidd, G. M.	R.C.A.F.
Kingsmill, W. B., '44.	Rating, R.C.N.V.R.
Kift, W. L. H.	R.C.A.F.
Kitchen, M. J.	R.C.A.F.
Kramer, H. W.	R.C.A.F.
Lambert, S. N.	N.A. 2, F.A.A., R.N.
Langdon, K. R. N., '44.	2nd Lieut., R.C.O.C.
Laurier, H. W.	A.C. 2, R.C.A.F.
Lindros, C. E., '44.	2nd Lieut., R.C.E.M.E.
Lindsay, W. K.	R.C.N.V.R.

Roll of Service

Lorimer, G. A., '44	Sub. Lieut., R.C.N.V.R.
Loudon, D. E.	R.C.N.V.R.
Luckett, H. W., '44	2nd Lieut., R.C.E.M.E.
Lusk, C. H.	R.C.N.V.R.
MacDonald, H. R.	R.C.A.
MacDonald, J. A., '44	2nd Lieut., R.C.E.M.E.
MacInnes, A. K. S. J.	R.C.A.
MacKenzie, A. F.	R.C.A.F.
McArthur, R. J.	R.C.A.S.C.
McCowan, W.	R.C.N.V.R.
McDonough, G. J. J.	A.C. 2, R.C.A.F.
McEachren, C. S.	R.C.A.F.
McGovern, L. P.	R.C.A.F.
McIntosh, J. A.	R.C.C.S.
McLaren, N. G., '44	2nd Lieut., R.C.E.
McMillan, R. F.	C.A. Course
McNair, D. J. T.	Pte., R.C.A.
McNiven, H. D., '44	Lieut., R.C.E.M.E.
Mansell, R. T., '44	Sub. Lieut., R.C.N.V.R.
Manson, A. N., '44	2nd Lieut., R.C.O.C.
Maughan, R. G., '44	Lieut., R.C.E.
Melvanin, F. W., '44	Lieut., R.C.C.S.
Mens, J. R., '44	Sub. Lieut., R.C.N.V.R.
Michener, J. S.	R.C.A.F.
Milligan, H.	N.A. 2, F.A.A., R.N.
Mitchell, A. L.	R.C.N.V.R.
Mitchell, J. A., '44	2nd Lieut., R.C.O.C.
Moffatt, A. G., '44	Lieut., R.C.E.
Monohan, H. S.	O/S Mm., R.C.N.V.R.
Moss, G. S., '44	2nd Lieut., R.C.E.
Murphy, G. J.	A.C. 2, R.C.A.F.
Niven, W. D., '44	Sub. Lieut., R.C.N.V.R.
Nixon, C. J. S.	R.C.A.F.
Noble, J. F., '44	2nd Lieut., R.C.E.
Noble, W. E., '44	Gunner, R.C.A.
Northwood, E. J., '44	Sub. Lieut., R.C.N.V.R.
Paulin, A.	Pte., R.C.O.C.
Patterson, T. S.	
Pearl, E., '44	Lieut., R.C.E.
Pappas, N.	R.C.E.
Penfold, R. E., '44	Sub. Lieut., R.C.N.V.R.



Roll of Service



Perkins, D. H., '44	Lieut., R.C.E.
Potts, A. R., '44	2nd Lieut., R.C.O.C.
Ratz, A. G., '44	Sub. Lieut., R.C.N.V.R.
Redman, W. S.	R.C.A.F.
Reid, I. B.	N.A. 2, F.A.A., R.N.
Resnick, G.	R.C.A.
Rettie, A. J., '44	Lieut., R.C.E.
Richardson, R. M.	R.C.E.
Rivers, R. C., '44	2nd Lieut., R.C.E.M.E.
Rodman, M. F., '44	Sub. Lieut., R.C.N.V.R.
Robins, J. A.	F.A.A., R.N.
Robinson, E. G.	Pte., B.T.C.
Ross, D. G.	Pte., C.I.C.
Rueter, F., '44	R.C.E.M.E.
Ruta, G. J. S., '44	2nd Lieut., R.C.O.C.
Sabiston, M. R.	N.A. 2, F.A.A., R.N.
Salkovitch, N. V.	R.C.A.F.
Sanson, W. M.	R.C.A.F.
Seddon, J. H.	O/Sm., R.C.N.V.R.
Scoon, R. A., '44	2nd Lieut., R.C.O.C.
Sebert, J. O., '44	Lieut., R.C.E.
Seymour, J. H., '44	2nd Lieut., R.C.E.M.E.
Shelson, W., '44	Lieut., R.C.O.C.
Simpson, D., '44	Sub. Lieut., R.C.N.V.R.
Smith, R. V.	A.C. 2, R.C.A.F.
Smith, C. H. M.	R.C.E.
Sommerville, L. W., '44	2nd Lieut., R.C.E.
Stafford, J. D.	R.C.N.V.R.
Stein, G. W.	R.C.N.V.R.
Stirrett, G. P.	R.C.E.
Stock, V. N.	Sub. Lieut., R.C.N.V.R.
Stephens, T. J.	R.C.A.F.
Stone, D.	R.C.N.V.R.
Stuart, A. K.	Sub. Lieut., R.C.N.V.R.
Suydam, R., '44	2nd Lieut., R.C.E.M.E.
Symons, J. J.	N.A. 2, F.A.A., R.N.
Taylor, J. M.	R.C.A.F.
Terry, E. A.	R.C.N.V.R.
Thring, E. H., '44	2nd Lieut., R.C.E.M.E.
Tiffen, H. D., '44	2nd Lieut., R.C.E.M.E.
Tomlinson, G. K.	R.C.A.F.

Roll of Service

Tyhurst, E. G.	R.C.A.F.
Uffen, J. P., '44	Sub. Lieut., R.C.N.V.R.
Usher, E. S., '44	Sub. Lieut., R.C.N.V.R.
Van Luven, A. L.	R.C.E.
Wall, E., '44	2nd Lieut., R.C.E.
Ward, J., '44	Sub. Lieut., R.C.N.V.R.
Ward, J., '44	Lieut., R.C.E.
Watts, J. A.	R.C.A.
Weedmark, N. J., '44	Lieut., R.C.E.M.E.
Westland, J. A.	R.C.A.F.
Weir, W. J., '44	Sub. Lieut., R.C.N.V.R.
Weller, R. C.	R.C.E.
Wheatley, E. W.	Pte., C.I.C.
Whittaker, R. H.	
White, H. B., '44	Sub. Lieut., R.C.N.V.R.
Wilson, A. M.	R.C.A.F.
Wilson, C. I., '44	2nd Lieut., R.C.E.M.E.
Whittingham, D. S.	C.A. Course
Worsley, C. R., '44	2nd Lieut., R.C.E.
Wright, W. J. C.	Sub. Lieut., R.C.N.V.R.
Yuill, E. S., '44	Sub. Lieut., R.C.N.V.R.
Yuill, R. R., '44	Sub. Lieut., R.C.N.V.R.



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TRANSACTIONS and YEAR BOOK

of the

UNIVERSITY OF TORONTO ENGINEERING SOCIETY

No. 59

JUNE, 1945

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EDITORIAL

"Diamond Jubilees"

Few of us in engineering were aware of the fact that early this term the Engineering Society celebrated its 60th anniversary. Festivities commemorating the occasion will be in the hands of the incoming executive, and we understand that preparations fitting for such an event are well under way.

"The Engineering Society was founded early in the year 1885 chiefly through the efforts of a few students in the Department of Engineering. Messrs. Herbert Bowman of the third year and T. Kennard Thomson of the second year being the principal promoters." (Excerpt from the Society's first publication in 1886.)

On its inception in 1885, the Society was run by a General Committee of five men. The Presidency was automatically filled by the Dean of the Faculty, while the secretary and three year representatives were elected to office. Engineering at that time was but a three year course.

The first General Committee of the Engineering Society held office for only four months and was composed of Dean Galbraith as president, T. Kennard Thomson as secretary, and J. E. Burns,

J. R. Gordon and B. A. Ludgate as first, second and third year representatives, respectively.

In the fall of 1885 a new General Committee was elected to office for the '85 - '86 term. The Dean re-occupied the Presidency, but the number of elected members was increased from 4 to 7, including a Vice-President (E. B. Harmon), a Secretary-Treasurer (J. C. Burns), a Corresponding Secretary (T. K. Thomson), a Graduate Representative (E. W. Stern), and three year representatives. It was not until the fall of 1888 that the Society became an entirely independent organization, in which candidates for all offices stood for election. Professor Galbraith felt that in order to make the organization of real benefit to the student body, they must undertake the entire responsibility of managing their own affairs. H. E. T. Haultain was elected first student President of the Engineering Society in the fall of 1888, and according to the Society records, was one of the youngest members to hold this office. As Professor Emeritus of Mining Engineering, he is still a very active member of the Society.

Next fall another 60th anniversary will also be observed, this by the TRANSACTIONS AND YEAR BOOK which made its initial appearance as the Engineering Society's official publication in 1886.

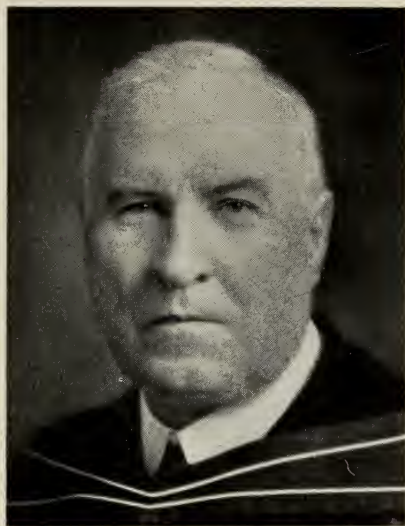
The first edition which was published in pamphlet form by the 1885-86 Committee on Publication and recorded the more important engineering papers read before the Society at its bi-monthly meetings. These pamphlets were distributed among the students and exchanged with other Engineering Societies with the result that the fame of the Society spread rapidly and extensively. A library in England requested numerous copies.

In 1886 the first edition consisted of 500 copies printed at a cost of \$90.00, \$60.00 of which was raised through advertising. The 1887 edition of 1,000 copies was published at a cost of \$112.00, \$55.00 of which was paid for by advertising. From this humble beginning the TRANSACTIONS developed into a 200-page publication, distributing over 2,000 copies to graduates and undergraduates.

Those of us graduating from "School" this year do so with the regret that we shall be unable to take an active part in the celebration of these two important anniversaries. We extend our most sincere wishes to the Society and the Year Book for their continued success as invaluable influences in the engineering undergraduate's "School" life.

W. W. MOFFAT

A MESSAGE TO THE GRADUATING CLASS



For the last time as President of the University of Toronto, I have the honour of sending a message of good wishes to the graduating class of the Faculty of Applied Science and Engineering; but I am glad to say that as Chancellor, I shall still be a member of the Board of Governors and shall have the privilege of admitting you to your degrees. My first words should therefore be words of hearty thanks to you and the members of "School" for their co-operation and support during the years of my administration. "School" has always supplied to the general life of the University energy, enthusiasm, good sense and loyalty. Wherever I have gone to address Alumni Associations, among the most active members have been those who sooner or later in the proceedings, raise the shout of *Toi ke Oike*. I suppose that your constant meeting with staff and fellow-students in one group of buildings creates a comradeship which issues in loyalty to your

faculty and to the University as a whole. I bespeak for the University in the future your help, both moral and material. You will probably, in the practice of your profession become affluent men of business and affairs; I believe that you will not forget your Alma Mater and her needs. You will be her best advertisement, and you will wish to pass on to other generations the opportunities of training which you have yourselves enjoyed.

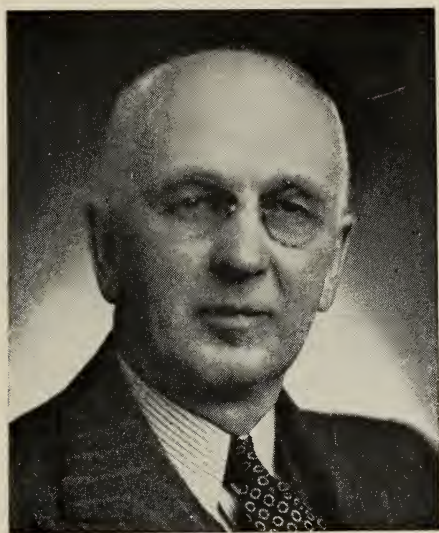
Your training as engineers will fit you for service in Engineering in all its branches, in administration and in citizenship. You will bear a great part in the discovery, conservation and development of the material wealth of this country. Canada is a "land of the second chance" for many and a land of providential surprises. Long ago during one of the wars between Britain and France Voltaire said that those two nations were at war for a few acres of snow and were spending on this fine war more than all Canada was worth. How surprised he would be to live and labour in the Canada of to-day! And there is still "much land to be possessed" and developed. That will be among your tasks. A greater Canada will emerge among the nations. You will go out into conditions perhaps difficult, but always challenging. The Engineer has made a great contribution to the winning of the war; you can make as great a contribution in winning and keeping the peace.

Above all, the engineer will not mechanize the human soul. Man is more than a machine; let him always be its master. Build this fair land till it is fairer still, but build with it a manhood of integrity, of ideals, of visions. It is MAN that matters. As Kipling says:

"By the peace among our people,
Let man know we serve the Lord."

H. J. CODY

INTO NEW TERRITORY



Viewed in whatever light one chooses, the break incidental to graduation is definite and profound. The young graduate cuts his tether, as it were, and moves into new territory. There he will see and hear new things and will be subjected to new experiences. It is well that he be prepared for them, to the end that he may profit rather than be dismayed and frustrated.

In normal circumstances the coming of September following graduation brings to one who had but lately finished his course something of nostalgia and of desire once more to tread academic halls. It is hard to think that the place can carry on without him or that he can stay beyond the renewed tide of student life that will once more flow across the campus and into and about the buildings and grounds. There is a mental and a spiritual wrench in staying away. But the time comes when the break must be made and it is good that it must. Young people have to test their strength in what is often an unresponsive and unappreciative world.

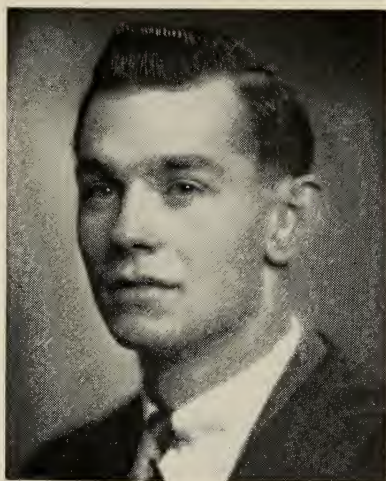
College life, helpful and formative, makes but moderate demands on personal responsibility. It is true that the student must learn to order his own affairs and find his way about in a world which is quite different from that of the home or the secondary school. But that responsibility is largely for his personal preservation and welfare, rather than for the welfare of other persons. In industry or business, it is different. Even a young and relatively experienced graduate will often be placed in situations where personal fidelity and dependability will be a critical factor in the success of an operation or undertaking and where the lack of these things may mean danger or disaster to others.

In this territory which the young graduate must explore for himself there is much to challenge and much to be won. The success there earned will depend very largely upon two very simple factors: initiative and dependability. With them the young man will go far; without them his voyagings and his adventures will be modest.

C. R. YOUNG,
Dean.



THE PRESIDENT'S MESSAGE



Relentlessly the hours have rolled by and it is with a feeling of personal regret that I now close the most enjoyable and instructive period of my life—that period covering my term of office as President of the University of Toronto Engineering Society. It has been a privilege and an honour to serve the eleven hundred Schoolmen whose singular loyalty to, and the co-operation with the Society is an example to undergraduate student organizations everywhere.

The Engineering Society entered its sixtieth year in February, and I think in passing another milestone, 1944 to 1945, the Society has had a successful year. The credit for this success is due to the nineteen men who make up the Engineering Society Executive, and the committees they appoint and control.

In reviewing the year's activities, it is easily seen that this year has been a full one. The season's activities commenced last fall with the Freshman Reception Programme. The initiation at Varsity Stadium, under the able guidance of Bill Daniel, followed by the dance that night, introduced the new Schoolmen to the social life at School. The councillor programme carried out by the senior students served to advise the freshmen with university,

school and curricula problems. This whole programme was designed to welcome, initiate and advise the members of the class of 4T8.

The Annual School Dinner, the fifty-fifth, was again held in the Great Hall at Hart House. This year the School, and the University, was greatly honoured in having as its guest of honour, Dr. W. E. Wickenden, President of Case School of Applied Science, Cleveland, Ohio. Dr. Wickenden's address was a crowning highlight to a marvellous programme engineered under the guidance of Jim Pickard, Ed. Peacock, Ken Jones and many others.

Again School excelled itself and produced the second successful event of the year, the School Nite Revue. Bob Sheppard, Whitey Belshaw and Curt McDonald and his stage crew deserve many handshakes for their excellent work in connection with the Revue.

The School-At-Home was again informal. The decorations, the corsages, the music of Mart Kenney, and the floor show all contributed to the success of the evening.

For the second year, School held its Open House and this year all the departments took part in the display. The third year men performed the experiments and acted as demonstrators, while the fourth year men brought their parents and friends to see the work which they performed in their respective laboratories in connection with their course. Nearly five hundred came that evening and afterwards light refreshments were served. Les. Elliott and his committee composed of the club chairmen were responsible for a successful evening enjoyed by all.

The backbone of our organization, the thing which does a great deal to unify the Engineering Society into a lively organization, is the Engineering Society Store. Under the management of the second Vice-President, Al Klassen, and with the assistance of our two indispensable girls, Miss Dorothy Lowry and Miss Irene Giffen, the needs of all the Schoolmen have been satisfied this year. Miss Lowry is leaving us this spring for a better job, having married F/Lt. Ross Clark, 3T7 Civil, last June. Best wishes, Dorothy and Ross, the Society will certainly miss you.

The General Meetings of the Engineering Society were held this year in Room 43 of the Physics Building. This was a new innovation and proved successful. Bill Tamblyn, fourth year president, with the help of the club chairmen, did a splendid job in obtaining excellent speakers for these meetings and the attendance of the Schoolmen was indeed gratifying. I extend my

appreciation to Dean Young and Col. LePan for their co-operation in securing this room for us.

The publication of a large issue of the *Toike Oike*, the Engineering Society's paper, was again carried out this spring. The purpose of this issue is to encourage the undergraduates in writing both technical and literary articles. The magazine serves also to enable the students and the faculty to read about new engineering developments such as research work being carried on at the University. Tom Munford, the editor, and his staff deserve a vote of congratulations in turning out this splendid issue and also the other regular issues of *Toike Oike* throughout the year.

Through the efforts of Bill Moffat, the editor-in-chief, the TRANSACTIONS AND YEAR BOOK, School's magazine, has seen a number of new innovations in this year's edition.

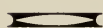
Lastly, I wish to thank Murray McCulloch, the Treasurer, Pete Aykroyd, Director of Publications and Publicity, Wally Bruce, the Secretary, the year presidents and the club chairmen for their kind co-operation. These men have all worked quietly and unselfishly to carry out their respective duties. Don Gibson, the president of the Athletic Association of School, has done a grand job in successfully directing the winning of eleven interfaculty championships out of a possible fourteen. He had over nine hundred Schoolmen participating in sports. Jim Pickard, the First Vice-President, did a marvellous job this year. It was through his wise counselling and leadership that the social functions of School were so successful this year.

In closing, may I wish the very best of success to next year's president and his incoming executive, and may they have a successful and active term of office.

R. F. MOORE.

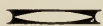


TRANSACTIONS 1945



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ENGINEERING SOCIETY
THE UNIVERSITY OF TORONTO

GENERAL MEETINGS OF THE ENGINEERING SOCIETY

The first general meeting was held on October 16th, 1944, when Mr. T. A. Reed, Secretary of the University of Toronto Athletic Association, was the guest speaker. Mr. D. Gibson introduced the speaker.

With the aid of lantern slides, Mr. Reed presented an interesting account of "The History of Old Toronto and the University."

On November 14, 1944, Dr. Dennis Jordan was guest of the Engineering Society. Dr. Jordan showed moving pictures that he had taken of the Alaska Highway. Besides the beauty of the country which Dr. Jordan had so excellently shown, the pictures were also of great interest from the engineers' viewpoint.

The next General Meeting was held on December 7, 1944, and at this, Mr. Duncan of Dominion Oxygen Company outlined by showing films, the properties of oxygen and acetylene and described many industrial uses of the oxyacetylene blowpipe and its adaptations.

At the meeting of Thursday, January 11, 1945, Mr. J. H. Take of Canadian General Electric Company gave an interesting talk on the history, uses, and adaptability of Electric Welding in industry and then presented a technicolor sound film to illustrate his introductory talk.

The guest speaker at the meeting of February 8, 1945, was Mr. Long of the Bell Telephone Company whose address was "Giving Wings to Words—To-day and To-morrow."

THE PRACTICAL EXAMINATION [OF MINERAL PROSPECTS

By C. C. Huston

(The "Transactions" has been most fortunate in obtaining this article from Mr. Huston on the examination of prospects. Mr. Huston is a graduate of the renowned Michigan School of Mines, and during the past 15 years has examined properties in all parts of Canada and in many foreign countries. At the present time he is associated with Macassa Mines Ltd.—EDITOR.)

I have been asked to present my ideas on the examination of mineral prospects. The views and observations made here are my own; no effort has been made to align them with standard texts. Therefore, while they may find general acceptance amongst fellow engineers, they must stand as personal opinions.

* * * *

In order to properly consider the subject, it should first be set into proper perspective.

Why are Prospects Examined?

Prospects are examined to determine whether they may contain economic concentrations of metals or minerals, the legitimate mining business being run, pretty largely, to make money.

Next to food and clothing, modern civilization is based on Metals, with which are included in this discussion minerals, oils and fuels.

A constant and increasing demand for the common metals requires the location of replacements for depleted orebodies while the use and appreciation of new metals brings increasing demand for them. Aluminum is a good example of a metal which has, within recent years, made great progress. Today we are becoming increasingly aware of magnesium, chrome, tungsten, thallium and others lesser known.

In either case, prospects are examined for buying or selling property or product.

The ultimate purpose of any examination is to obtain facts—favourable or otherwise; to present these facts in intelligent order and to interpret correctly the assembled information.

In order to properly evaluate the facts, it is imperative that the "purpose" (reason) behind the examination be clearly understood. When examining for others, the engineer should keep this question constantly before him so as to answer properly those questions most important to his principals.

Who Makes Such Examinations?

Many people feel qualified to examine and report upon prospects although in many cases their zeal will exceed their ability. For this reason, engineers are called in. Their training is the analysis of data, their craft should be its proper collection.

Because of the necessity for replacing orebodies mined out, a group of engineers known as "field men" have come into being through companies attempting their own perpetuation.

The "field engineer" is, in essence, a transitional phase leading into the consultive field. Not all field men can be considered general consultants, but the acquisition of general experience will lead from field work on "raw" prospects by gradual stages into the examination and appraisal of operating mines and thus into the consulting field.

Consulting engineers are engineers of rounded experience capable of assessing the merits of any project within their field. Since this discussion is limited to the examination of prospects, the examination of operating or inoperative mines is omitted although the fundamental processes are identical.

Technically trained young men with some experience are reasonably well fitted for the examination of prospects. It is an excellent training field. Such young men will ordinarily be paid a salary or fee for examinations of this type and may even be rewarded with a participating interest if successful.

This interest reward is a controversial issue; arguments are advanced to show that such interests tend to influence the final evaluation. The writer feels that this matter should have no effect upon final conclusions as rather than retarding, an interest should spur the young man on to maximum effort.

In any case, should the interest be discussed, the young engineer must see that it is clearly set forth in writing and is fully under-

stood by both parties. It is advisable to purchase such interest rather than to be the recipient of a gift.

The requisite qualifications of the examining function are as follows:

1. *Integrity.*

This is a first essential. An extract from a speech by Mr. Scott Turner in 1932 will be sufficient moralization on this subject: "For the long pull, the importance of unquestioned integrity cannot be over-emphasized. Leaders of big business sometimes have need of a man as agile and unscrupulous as a cat on a back fence; on occasion they may have to employ brilliant, smart, spectacular or crafty people, but when the special purpose for which such persons have been hired has been accomplished, they are no longer wanted. Given natural health, intelligence, ability and adequate training, probably the characteristics most admired in the young employee are steadiness, dependability and loyalty. The last is the best. If you cannot be simple, direct and faithful in your dealings with your administrative superiors, no one will want you for long."

2. *Technical and Scientific Training.*

No deprecation of the self-made man is here made or intended. There are better men amongst this group than the schools and universities have produced, but the increasing complexity of the mining business has resulted in a demand for the trained individual who thoroughly understands fundamental scientific principles.

3. *Active Curiosity.*

The engineer should immediately inquire . . . "why" . . . "where" . . . "when" . . . and "who". He should know "how" (or where to find it out). It will be noted that "who" refers to persons. An engineer must be observant and have an active curiosity about things and also about people. Things are largely manipulated by persons and it is vital to understand who is effecting the manipulation if one is to comprehend the action itself.

4. *Common Sense.*

Common sense has been termed "the reaction of instinctive memory"; it is, perhaps, the ultimate combination of experience and judgment.

* * * *

If, therefore, the field under discussion appeals to a young engineer, he must assay first his own capabilities and "examine his own prospects." In order to round out his experience as rapidly as possible, the writer offers the following suggestions:

- (a) Five years travelling from mine to mine immediately after graduation.
- (b) Foreign experience in at least one country.
- (c) Combine with these two, various types of operation so that he acquires experience in golds, coppers, base metals, industrial minerals, etc., etc.

What is a Prospect?

A prospect is a mineral deposit of possible commercial importance upon which little or no work has been done to demonstrate its economic value. In some instances there will be outcrops from which definite conclusions may be drawn. In others there will be little to see upon which to base an opinion.

The comprehension of structural and geological relationships cannot be over-emphasized in either case. In appraising these conditions, the engineer is commonly guided by his previous experience or knowledge of other deposits.

Unfortunately, duplicate geologic conditions may not produce similar results and the reader is warned that what is true on one location is not necessarily true in another, especially in respect to different districts. There is, however, sufficient *similarity* of reaction between prototypes to make their understanding necessary.

The engineer should be prepared to examine prospects for any metal or mineral. In Canada, a great field in the non-metallic minerals has been, on the whole, overlooked.

The engineer will examine many prospects which can be loosely classified as "wildcats" and "prospector's dreams." These examinations may not be warranted by the facts but their careful and polite consideration will produce good-will and, perhaps, later bring a good bet from the same source. As an illustrious engineer once said "lightning strikes the hen-house as readily as the church steeple." In case the prospect appears questionable, a few samples will immediately refute any lavish claims.

Where are the Prospects?

Mining runs, like all human endeavour, in cycles and in fashions. There are both fashionable rocks and fashionable areas. At the moment "green carbonates" are the fashionable rocks and the "Yellowknife" the fashionable area. The balanced engineer will attempt to maintain a broader viewpoint.

It is probably more economic to go contrary to such trends as prices for mineral properties in fashionable areas are generally excessive.

An engineer should be prepared to go anywhere, but not, perhaps, for anyone.

Finally, how are examinations made?

As has been stated, examinations are made to obtain facts, record them in logical sequence and interpret them correctly.

If the engineer has properly collected and recorded the facts, another man may make correct interpretation if the examiner has not.

In the collection of data, a camera is an invaluable adjunct and a daily diary absolutely requisite.

The following facts are usually given as a result of examination:

SAMPLING

This is the foremost consideration, since it is here that the final story is told. If the property has merit it will be possible to obtain values of economic significance, either on the surface or by probing below the visible horizon. Some engineers prefer character samples to determine the detail of further investigation.

The engineer must size up the project first, figure out how to attack it and then proceed on that basis unless, during his work, he finds valid reasons for changing his strategy. Should this occur, it is advisable to take time again to review the matter before proceeding further.

The plan of attack will depend upon the following factors:

- (a) Type of ore, orebody and outcrop.
- (b) Results desired, whether detailed or general.
- (c) Time available.
- (d) Limits of accuracy required.
- (e) Precautions desirable.

Whatever the ultimate method may be, keep track of the samples. Locate each one on a sample map (maps are vital parts of examination); describe each one in detail and tag each one carefully. One sample out of place or indefinitely placed can throw doubt upon the remainder.

There are many errors possible in sampling, most of which are avoidable. The common errors are listed as follows:

- (a) Failure to recognize ore.
- (b) Failure to see all workings.
- (c) Failure to sample at right angles.
- (d) Undue haste—a poor sample is worse than none.
- (e) Confusion of records.
- (f) Unintentional salting:
 - (1) Hard or soft streaks in the ore.
 - (2) Failure to clean site.
 - (3) Contamination.
- (g) Intentional salting.

These errors may be avoided by the following precautions:

- (a) Thoroughly cleaning of the surface to be sampled, blasting if necessary.
- (b) Cutting short sections (not over 3-foot in any case).
- (c) Cutting out mineralized or suspected high-grade streaks as separate, short panels.
- (d) Extending by separate samples into wall rocks every third or fifth section.
- (e) Doing as much sampling as possible personally or, at a minimum, close supervision of sampling done by others, taking check samples personally.
- (f) Keeping record of and caring for samples personally.

A question that often arises is the advisability of extracting free gold from samples. Since free gold is only the visible portion of the metal, the writer can see no reason for extracting it from any sample, as it represents a portion of that which is sought. Record its presence on the sample records and *discount it (if desirable) in the evaluation and recapitulation*, but do not remove it from the sample.

Well mineralized streaks or fractures, or locii suspected of enrichment, should be cut out separately, even if this means reducing the sample length to inches. By so doing, it is possible to isolate the value into its proper relation and to make a more accurate evaluation.

No discussion of sampling would be complete without some reference to "salting." Salting may be both intentional and unintentional. Of the two, the latter is the more dangerous as it will be unconsciously done by the investigators themselves.

It is essential to take precautions against intentional salting and to beware of unintentional salting.

Intentional salting is varied by the ingenuity of rascality, which is fully as active as the ingenuity of honesty. It may take the form of salting the tools with which the engineer works; the site may be salted in ways too numerous to be recapitulated here, or the samples themselves may be tampered with *after* properly having been taken, by the addition of foreign material or by simple substitution. Core samples are particularly open to the latter method.

It is best not to let the owner know that tampering is suspected. Reasonable and fair precautions should be taken and if necessary the samples kept under unobtrusive observation. If there is evidence that salting has been or is being done, walk off the job with a minimum of time, as there is obviously no need to carefully examine a property requiring such extraneous assistance. Since the unproved accusation of "salting" may be considered libelous or scurrilous, the engineer must be positive before the charge is made.

Unintentional salting is possible where soft or friable streaks are too heavily taken, where the site is not clean, the tools polluted or the sampling process carelessly done. The same precautions will be effective as in the case of intentional salting.

The precautions are based principally on constant care and attention to detail. It is sometimes advisable to take valueless material and introduce it unobtrusively into the sample series; it is possible to take one or two samples, crush, quarter and divide them into two unequal portions so that, should extraneous materials be introduced, they will not be possible of pro-ration, and the assays will demonstrate the error. The most effective precaution is reiterated as, *constant care and attention*.

In the interpretation of sampling results, it is generally conceded to be necessary to "cut" high values so that their influence will be properly distributed. If there are only a few high assays they can be included or excluded, since their number will not widely affect the final results. If, however, there are sufficient to make or break the calculation, they must be seriously and meticulously weighed.

The fairest preliminary cut can be done by averaging results without cutting, obtaining a preliminary average figure uncut, and then re-averaging, this time replacing any value *over* the preliminary average uncut figure with that figure. If the re-averaged figure is still of economic grade, then it may be assumed that the ore will stand up to that figure or closely approach it. This desirable result, unfortunately, is not usual and further estimates must be made.

A method used by the writer and advanced as a suggestion is to plot each assay on a value ordinate. A concentration of plots will be noted if sufficient assays are available. Those values *above* this concentration can then be adjusted, since the concentrated plots will show an approximate point for mean cut-off and represents a graphic mathematical approach to the problem. Cutting can then be done in many ways; either by averaging all assays above this median and using that figure as the cut, or assuming arbitrary cut-offs. Since the calculation of values from samples is a mathematical problem, it should receive mathematical rather than intuitive treatment. It is imperative that several methods be tried and should any two (or more) reasonable methods find agreement, that figure assumed.

It might be said that it is not advisable to be too "tough" on a raw prospect, since one will be looking at that stage for *possibilities* rather than for *certainities*.

LOCATION

The location of the prospect should be described precisely. The country, province, state, district or other geographical unit in which the prospect is located should be recorded. Owners' names and claim names, while necessary for record, are subject to change. Surveys, group and claim maps, actual distances and directions from known landmarks, are invaluable.

All workings—trenches, pits, shafts or other openings—should be located, examined, and mapped *in detail*.

If a set of records for constant reference is being kept, latitude and longitude give precise locations.

If you have checked the titles, say so. If you have not, say so.

HISTORY

It is essential that all the available records be examined. Each map or plan should be studied carefully to discover why it was

drawn and what it *purports* to demonstrate, as well as what it actually does define. Copies (if permitted) of such records as are essential to the investigation should be made and the owner or his representative closely questioned. Straight questions will ordinarily get straight answers. If they do not, further inquiries will demonstrate their error by contradiction. A liar must have a phenomenal memory.

Calculations, even of the simplest order, should not be accepted as presented. They should be checked. *Nothing is so embarrassing to the engineer as a faulty calculation made from definite figures.* The engineer will have ample opportunity to make estimates, inject variables and finally assign them finite figures. When this has been done a calculation that is mathematically correct must be produced.

In reviewing the history of any prospect, there will appear difficulties of location, transportation, character of deposit and others. These should be assessed to the best of the investigator's ability but there is no reason for allowing a series of minor difficulties to become insurmountable because of their number alone. An engineer should be careful but not reactionary. One must bear in mind that good ore will tolerate much abuse.

When the historical features have been established, they should be presented in chronological order without interjected comment.

ECONOMIC GEOLOGY

Engineering has been described as the method whereby man shapes nature to human use and harnesses natural forces to human will. Economic Geology is the industrial application of geological principles translated into operation.

This means that the product, its uses and its occurrence at this particular site, should be reviewed. It is necessary to give an account of the geological and structural features and demonstrate their respective possible effects on later development.

Investigate and record (particularly in foreign areas) the topography, the "lay of the land" as it were, and *produce clear maps* of such features as are pertinent.

Investigate the vegetation, food resources, timber and water conditions. Water is of first importance in areas where useful or potable water is difficult or lacking.

Record climatic and health conditions. Malaria, dysentery and other plagues in their orbits are of first consequence to successful operation—besides which, the examiner may want to return or send someone else.

Investigate and check transportation facilities in detail; routes, costs and methods all have fundamental importance in new development. The importance of neighbours in new country cannot be undervalued, since first capital costs are usually met under the most expensive conditions and should be shared if possible.

Check sources and costs of labour, power, fuel, explosives and timber.

Investigate government conditions. This is extremely important in foreign countries and even in inter-provincial consideration. Taxes should be reviewed, since taxes are (and will continue to be) of first importance as an integral part of cost. Review the laws and their effect upon operations. Health and pension acts and hours and rates of pay are increasingly fixed by decree and must be fully appreciated.

In foreign countries, lean backward in obeying all laws, as it will save the visitor time in the end. Some of them may seem impertinent or even ludicrous; they are not so considered by the inhabitants. The stranger should not criticize such laws or regulations unless he is prepared to suffer the consequences of his rashness. Ethics and morality are geographically varied.

In other countries the engineer will find influences which he may consider "illegitimate." Investigate them carefully, both for their effect upon contemplated development and for the future guidance of the engineer or others who may follow him. It may be advisable to withhold the written expression of his opinions in these matters until he is outside their influence, although this would be the extreme case.

As a fundamental of foreign work, it is imperative to have the good-will of authority, which can do everything to expedite or to hinder the strangers task.

CALCULATION OF ORE OR COMMERCIAL POSSIBILITIES

It may be questioned whether any engineer should estimate grade or tonnage from drill holes and surface samples since the sampled volume is so fractional a part of the whole. Such estimates may be misleading and it would be more accurate to confine

the estimate to a statement that there is *indicated* sufficient volume of possible ore-grade to warrant looking at it underground. In cases where it is necessary to produce a preliminary figure, the utmost care and attention must be taken to arrive at a figure which is neither ridiculously greater nor calamitously lower than can exist.

Again, the writer recommends the use of several comparable methods to arrive at a checking figure.

These methods have received so much acceptance and are so generally understood as to be redundant here.

MERITS AND LIMITATIONS OF PROPERTY

In new areas, the engineer may find little visible material upon which to base a decisive conclusion. Structural and geological features are of prime importance, but are too often obscured. It is therefore necessary to see and correlate every possible reference point.

In older areas, the records of local producers will throw much light on the merits of the prospect. The limitations may then consist of natural or artificial boundaries, state of the workings and the amount of exposure seen as well as their type and character.

Many of these points are matters for judgment. This attribute may be developed by "guessing", recording privately the "guess" and checking it later as the opportunity arises. This can be one of the functions of the diary and will, if properly done, develop instinct—a most necessary adjunct to the engineer.

MARKETS FOR PRODUCT—FORECASTS AND ASSUMPTIONS

Assess these items carefully, doing such research as is requisite. Refer to government and search out private records. Insert tables which have significance.

When estimates or forecasts have been made, they should be labelled as such and isolated from factual information so that they cannot become confused.

ADVICE

The engineering function is to obtain facts, interpret them, and present advice based upon the collected and assimilated data. If the interpretation of facts is unpalatable, the engineer should not bury the facts or temper his interpretation.

Advice will concern future development, the scale and scope of such work, the equipment required and the cost. When the engineer has finally estimated cost, the figure may be assayed by inquiring whether he is willing to undertake it on his own estimate. A conservative engineer may allow too great an item for "incidentals." "Unforeseen contingencies" are admissions of error in estimate.

ESTIMATING PROFITS

Profits represent the amount of money remaining after *all* the bills have been paid. Operating costs are not sufficient for profit calculation; taxes, depreciation, amortization, all are "costs" and must be included. These latter items will total not less than 50 per cent of operating costs today and may easily spell the difference between success and failure.

* * * *

It can now be assumed that the examiner has collected and collated the generic facts roughly outlined above and is prepared to summarize and formulate conclusions.

In the summary, be brief and specific; use good grammar and avoid technical terms which confuse the layman. Reading a report replete with abstruse technical terms is strenuous and may lead to misunderstanding.

Before arriving at conclusions, weigh *all* the evidence carefully, reverting to the "purpose" of the examination and consider whether all the questions that may arise in the mind of principals have been answered.

The engineer must make definite conclusions and abide by them.

From conclusions, the engineer will be naturally lead into the recommendations he finds advisable and proper.

Since, in the matter of conclusions, he will have to back his own judgment, the following "touchstones" are offered for what they may be worth:

1. If the *values* are good, more work can be recommended even though the geology and structure are poor.
2. If the *structure and geology are good*, more work may be recommended even though the values are poor.
3. If both are bad, nothing else need be said.

The ultimate touchstone, for close decisions, might be a rhetorical question—"would the engineer put his own *or his friends'* money into the venture?"

* * * *

The "deal", strictly speaking, is the affair of principals unless the engineer is directly consulted thereon. It should not be commented upon, other than to record its details (if they are made available), and unless it is felt that the principal is a novice about to be served an unpleasant novitiate.

For his own information and record, the engineer should retain, with the consent of his principals, a copy of his final report. The notes from which it is prepared are generally considered the property of the engineer, although in special cases they may not be so. An accurate record of expenditures made should be kept and presented as a detailed account.

Any question, justifiable or not, of the "monetary" honesty of the engineer is difficult to refute, hard to outrun and impossible to live down.

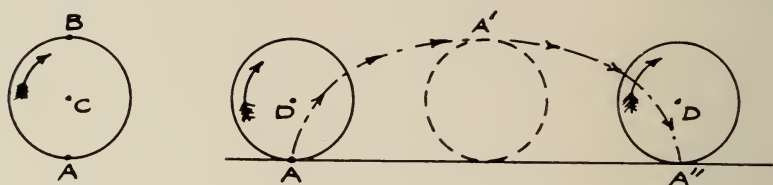
Finally, if the engineer needs advice, he should go to an older engineer and present his case, hypothetically if need be. The older man will, in most instances, be glad to help and give the benefit of such experience as he may have. In cases where such information is required, it is advisable to go to the authority in whom the engineer has personal confidence, or make inquiry as to the qualifications sought. The engineer should not be content with reference to subordinates as their advice will please neither themselves nor the engineer.



By E. A. Allout

EVOLUTION AND REVOLUTION

At first sight there would appear to be little in common between the gradual unfolding or progression that characterizes evolution and the implication of sudden and violent change that is generally associated with revolution. In engineering, however, revolution has an entirely different significance, namely, "motion in a circular course." In that case, if the centre C be fixed, point A must return to its original position before the revolution is completed—"topsy-turveyism," in which A stops at B , is only a half-revolution.



However, if the centre moves along $D D$, as it does in the rolling of a wheel, A passes through A' and reaches A'' in one revolution, thus returning to its original position on the wheel but travelling steadily onward in space—a combination of evolution and revolution. Revolution can thus be stationary or progressive, according to circumstances.

This is analogous to the manner in which engineering education has developed within the past century. Originally, engineering was a branch of natural philosophy, a special form of logic, generally based on insecure or fallacious premises, which had become hallowed by tradition, but these postulates were eventually subjected to analysis and scrutiny, the good being retained and the bad replaced. As observation and experiment gradually displaced reasoning and argument, the practice of engineering became, to a great extent, a rule of thumb business—a trade, rather than a profession—and was esteemed accordingly. Indeed, that idea still persists in many places, more specifically among some of the older school of engineers, whose narrowness of mind and worship of tradition is almost incredible. It is not without cause that, in a discussion on the Education and Training of Aeronautical Engineers,¹ a highly placed officer in the Air Force is stated to have given a testimonial to the following effect: "This officer is a highly qualified engineer,

a fact which has been a hindrance rather than a help to him throughout the whole of his service."

The ever-increasing demands by the public for the products of a mechanized industry and the increased degree of specialization and standardization that resulted therefrom, combined with the existence of a huge home market in America, caused engineering education in the United States to develop in a manner similar to that of industry. As a consequence, the whole tendency in that country was toward the use of specialized courses in every conceivable subject. So absurd were some of them that one would scarcely be surprised to read of the inception of a course in "ton-sorial engineering" for the budding barber! However, the schools were not entirely to blame for this, as they had to meet a demand from employers that their graduates should be almost immediately useful in some particular field. This attitude was quite prevalent in Canada as recently as some ten or fifteen years ago, when the author had a long argument with an employer, who considered that the engineering course at Toronto did not include enough "combustion", that being the phase of engineering in which he was interested. The reply was that the present course contained as much combustion as could reasonably be included in four years and that, if all such requirements were to be met, either the engineering course would have to be about ten years long, or a large number of highly specialized courses or options must be instituted.

This then, was the situation as it existed in America until comparatively recently and it paralleled industrial development in that country. The need for greater production and the comparative lack of trained and skilled workers had made it necessary for machines to be devised to supplement or supplant handicraft. Similar changes had occurred in Great Britain and Europe, but to a much smaller extent. Production there was still dominated by skilled mechanics, who had been apprenticed for years to their respective trades and whose motto was quality and endurance rather than quantity, until the inevitable dilution of labour occurred during the First World War. Thereafter, mechanization and all that it implies, stimulated by international competition, played an increasingly important part in European engineering. Education still consisted very largely of instruction in mathematics and the fundamental sciences, but there was a rising demand for specialized courses of a more practical nature and the colleges, perforce, had to do what they could to satisfy that demand.

Pressure of national and international events, however, together with the advent of more enlightened management in industry, made it necessary for engineering educators on both continents to pause and take stock of the situation and to re-define the purposes of engineering education. It was realized, first by some of the more advanced teachers and soon by many others that, if engineering were to be a profession in the true sense of the word, it was necessary to broaden the basis of education, even at the risk of omitting some of the factual subjects that had come to be considered as essential parts of an engineering training. The views of American educators in this connection have been given at length by Dean Young and others in various speeches, articles and papers,² and these are corroborated by the statements of many English engineers,³ of which the following are typical examples:—

“The education of engineers should be broadened in scope, the better to fit them for leadership in their own profession and in the community at large, to the ultimate benefit of both the young engineer and his employer.”

“Some means should be found of broadening the curriculum because the undergraduate is going to be a citizen as well as an engineer, and little attention has so far been paid to enabling him to discharge his duties in the former capacity.”

“Engineering has an economic as well as a technical aspect and the economic aspect is at present seriously neglected.”

“University engineering schools should cease to treat all students as potential high grade scientific or technical workers. Those who are not, should receive instruction in economics, law and social science *in place of the more advanced technical instruction*. It is the duty of the university to equip men for leadership and not merely to impart advanced technical and scientific knowledge.”

Quotations of this nature might be multiplied indefinitely.

The University of Toronto observed these signs at an early date. In 1932 the author attended a small conference, at which the need for increased tuition in Economics was discussed and methods were proposed for bringing this about. The Faculty Council, in 1941, appointed a committee to confer with the Department of Economics and, in the following year, a new course of lectures in this subject was added to the second year curriculum. The Committee on Development (1943-45) surveyed the whole field and recommended new courses in Engineering and Society, Modern World History, Political Science, Modern Political and Economic Trends, Phil-

osophy of Science and the Profession of Engineering, all of which came into operation in the session 1944-45. Recently, a new course on "Engineering and Business" has been organized, starting in the session 1945-46, to meet the needs of those who require a general engineering course in which special emphasis is placed on the business and administrative side of the profession. It is hoped also that this course will be of particular advantage to those men returning from the armed forces who have already demonstrated their fitness for work of this kind.

How are all of these additions to be accommodated? From time to time the Faculty has been urged to extend the length of the course to five years. This has been considered several times, but has been rejected because of the objections that such an innovation should be the result of common action and not adopted by a single university, that it would impose an additional burden in time and money on students who are not well-to-do, and because it would require additional staff, which is not now available. Apart from these obvious objections, the author is of the opinion that, for the great majority of students, a four year course is quite long enough, and that they would be of no more value to industry after five years than they are now. Further, it is the common experience that, if a five year course were instituted, the time would be rapidly filled, and those who are now advocating it would press for six years and so, *ad infinitum*. It is recognized that there are some students who could and should be trained for five years, but the author believes that these, who would ultimately be employed in the higher technical positions, should return for post-graduate work. In this way, the engineering side of the School of Graduate Studies would receive a needed stimulus.

It should be recognized also, that the Faculty of Applied Science and Engineering is not merely an entity in itself, but is a component part of a larger body—the University. It should not only function as a means of educating engineers, but should also give its students the broadened outlook that can only be obtained by exchanging experiences with others who have different interests. In 1934-35 the course in Engineering Physics was instituted, creating a bond between the Applied and Pure Sciences, and the new course in Engineering and Business will provide a similar connection with the Faculty of Arts on the side of Economics.

It may be argued that the logical result of the foregoing reasoning would be a single course with some subjects made optional.

In theory that may be true but, in practice, the advantage of such a development would be more than doubtful. The value of a university training is, or should be, mainly inspirational, and our enrolment is already very large. This inspirational value is to be found principally in personal contacts between staff and students and the larger the classes, the less intimate that contact will be. With all its faults, the method now employed of dividing students into groups, having some regard to their personal interests, would appear to be the most practicable under present day conditions. If some way could be found of using the tutorial method of instruction to small groups, that procedure would appear to have many advantages. Even so, tutors vary considerably and some groups would benefit while others might conceivably be worse off than they are at present.

These are the considerations that have motivated the recent changes in the engineering curriculum and, while admittedly the results constitute a compromise between various viewpoints, they are the result of long and patient study on the part of the Faculty Council and its various committees. The principal objective in this, as in any other branch of education is, perhaps, best expressed in the words of Solomon:—

“Wisdom is the principal thing; therefore get wisdom;
and with all thy getting, get understanding.”

The wheel has turned full circle, and we have returned to the broad concept of education from which we started, but we have not returned to the starting point, as behind us is the accumulated experience of past years.

The way to progress is both by *evolution* and *revolution*.

¹Journal Royal Aeronautical Society, London. October, 1943.

²Including:

Inaugural address of Dr. H. N. Davis, President, Stevens Institute of Technology, February, 1929.

Journal of Engineering Education, March, 1940; May, 1944; November, 1944.

Bulletin of Virginia Polytechnic Institute, November, 1942; Mechanical Engineering, January, 1945.

³c.f. “Educational Reconstruction,” a symposium of papers in the “Journal of the Institution of Mechanical Engineers,” October, 1943, pp. 174-192.

OXY-ACETYLENE APPLICATIONS IN WAR INDUSTRY AND THEIR POSTWAR POSSIBILITIES*

W. A. Duncan

In former papers presented to the Engineering Society, a number of which have been published in TRANSACTIONS and YEAR BOOK, the elementary principles of oxy-acetylene welding and cutting have been covered in detail; but, for the benefit of those to whom the subject is new, brief mention will be made of the basic factors on which the industry is founded.

Oxygen is most commonly manufactured for commercial purposes by the liquefaction process. By this method, air is liquefied, and the main components—oxygen and nitrogen—are separated by subsequent evaporation. The oxygen is compressed into high-pressure cylinders, and distributed to the user. As the gas is withdrawn from the cylinder, the pressure is controlled by a reducing valve or regulator, so that a working pressure suitable for a given application is obtained.

Acetylene, as is generally known, is manufactured from calcium carbide, and is available in standard cylinders for portable use. The majority of the larger users have their own acetylene generators, the gas being piped throughout their plant to convenient outlets at the various use points. Similarly, oxygen is manifolded and carried through pipelines parallel with the acetylene lines, eliminating cylinder handling throughout the plant. Portable generators are also available for such uses as large construction jobs and overland pipe lines.

Fusion-Welding

Oxy-acetylene fusion welding is accomplished by bringing two pieces of metal together and melting the edges in contact. The molten metal flows together until each edge is completely fused with the other, and, in most cases, additional weld metal is introduced to the joint by means of a filler rod. In order to obtain thorough fusion to the bottom of the weld, the edges of all but very thin sections are bevelled. Strong, ductile joints are thus obtained

*Paper presented to the Engineering Society, by W. A. Duncan, Manager, Process Service, Dominion Oxygen Company, Limited.

on any thickness of material. Mechanized, or semi-mechanized applications of oxy-acetylene welding have been developed for the manufacture of shell casings and various types of military containers, and the procedures are applicable to the manufacture of tubing, barrels, drums, and tanks.

Bronze-Welding

For applications where it is not desirable to melt the metal being joined, it is possible to produce sound, strong joints by means of brazing, or bronze-welding. This is accomplished by heating the edges of the joint to a dull-red heat and applying molten bronze from a bronze welding rod which, at this temperature, will unite with the base metal to form a strong bond. A bronze-welded joint is comparable to a fusion weld in many respects, and its advantage lies in the fact that it can be done at a lower temperature, so that it is faster and more readily accomplished.

Moving parts subject to continual wear are often rebuilt by depositing a layer of bronze on the contacting surfaces. This process is known as bronze-surfacing.

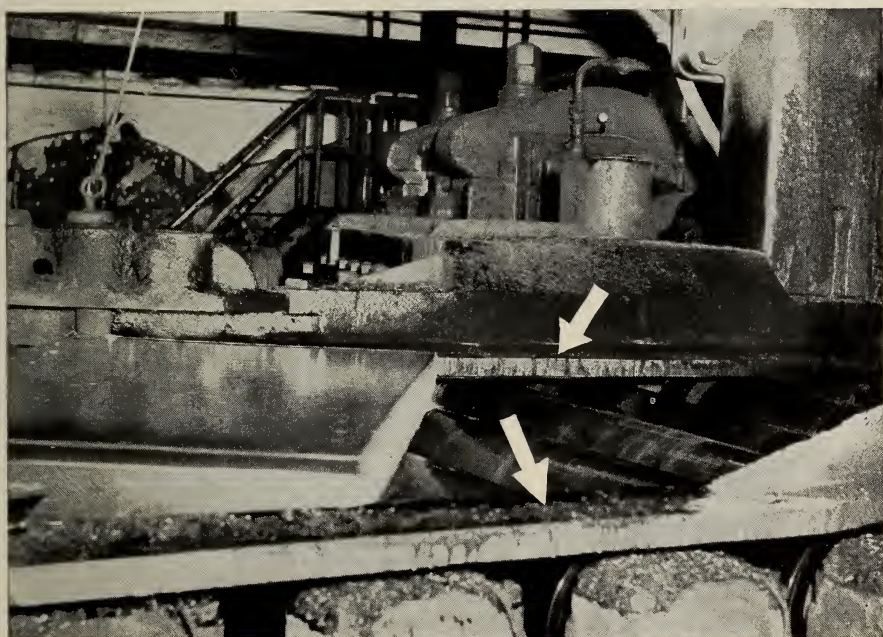
Pressure-Welding

Oxy-acetylene pressure-welding is a relatively new patented method of joining metals, which differs from practically every other welding process in that the weld is not made in the liquid phase, but by coalescence of grains across the weld face at subfusion temperature under the influence of controlled temperature and pressure. The weld is accomplished by abutting the clean, square faces of two sections to be welded under moderate pressures, and heating the weld zone by oxy-acetylene flames to a uniform temperature of about 2,100° F. to 2,300° F. until upsetting at the joint occurs. The completed joint has a definite bulge or upset at the weld, varying in degree with the thickness of the metal welded. The process is ideally adapted to semi-automatic, or fully-automatic operation, and is capable of a high degree of uniformity. Pressure-welding is used in the installation of pipe lines in boiler tube welding, rail welding, and numerous similar applications.

An interesting application has been in the manufacture of aircraft valve stems, whereby a short length of special alloy material is joined to a conventional valve stem material prior to forging, with the result that the final product has a uniform overlay of alloy material at the point where it is needed, with a degree of uniformity not otherwise obtainable.

Hard-Surfacing

Metal parts that are subjected to abrasion, heat, or corrosion, can be made to last from two to twenty-five times longer by applying a protective deposit of a hard-facing alloy on their wearing surfaces. The oxy-acetylene flame is particularly well suited to this type of work. On parts subject to abrasive wear, such as shovel teeth, dies, shear blades, and the like, hard-surfacing rods having the desired physical characteristics may be deposited on the surface.



Hard-faced guides (arrows) centre hot steel slabs as they enter the roughing scale breaker of a continuous strip mill.

Cutting Iron and Steel

Oxy-acetylene cutting is a process of severing ferrous metals by applying rapid chemical reaction that takes place between heated iron and oxygen. The oxy-acetylene blowpipe used for this purpose is so constructed that, in addition to producing a number of oxy-acetylene flames which rapidly heat the metal to a

kindling temperature, it delivers a stream of pure oxygen under pressure that does the actual cutting. In addition to the conventional hand-cutting blowpipe, with which you are undoubtedly familiar, various types of machines are used to carry and guide the blowpipe so that accurate and high-quality cuts can be obtained. The most widely used machine consists of a small portable carriage, electrically driven, which is provided with a means of controlling the rate and direction of travel. This type of machine is suitable

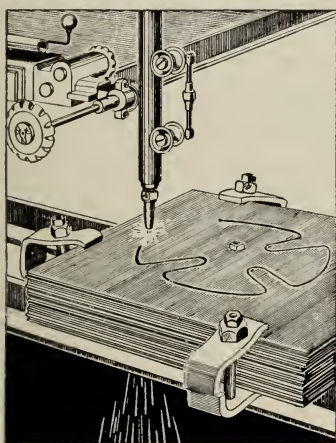


Here, the oxygen lance is being used in conjunction with the cutting blowpipe to remove a 7-ton riser from a 9-ton steel casting.

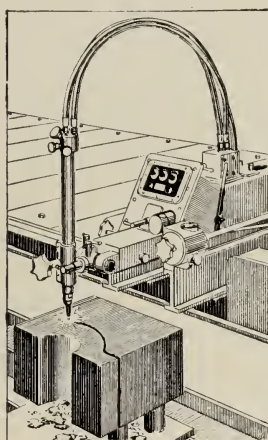
for straight-line cutting, and by means of a radius rod, a wide range of circles can be cut. Portable machines are used extensively in ship-yards and steel-fabricating shops for cutting plates to the desired shape, and for squaring and bevelling edges preparatory to welding. Equipment for this latter application, known as plate-edge preparation, has been developed, which permits simultaneous squaring of the plates and making one or more bevel cuts producing the desired contour of the plate edges to very close tolerances, ideal preparation for the subsequent welding operation.

Special cutting machines are available for severing round and square billet and bar stock to length, which have been widely used

in the manufacture of shells. The material to be cut is carried to a machine mounting as many as ten blowpipes, thus making it possible to produce lengths of steel with a high degree of accuracy at very high rates of production.



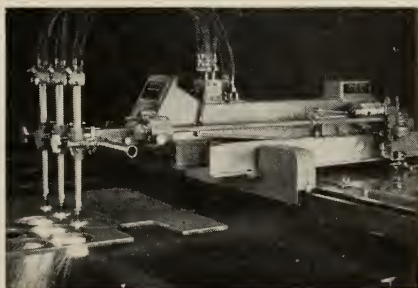
Stack-Cutting



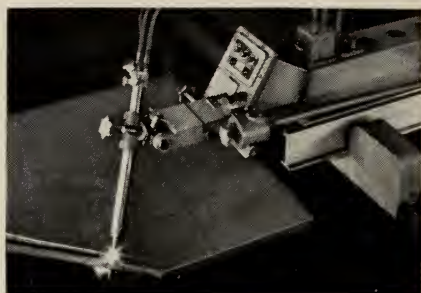
Shop Cutting

Cutting machines are also available for cutting steel plate or sheet to any desired shape. These machines differ from the straight-line type in that the cutting blowpipe can be moved along any predetermined path by means of a motor-driven templet tracer. This process is used extensively because of the accuracy and speed with which production items to be made from sheet or plate can be duplicated. Tank sprockets are being cut from $1\frac{1}{4}$ inch armour plate five at a time by means of a shape-cutting machine supporting five blowpipes, all of which follow exactly the same path. Where

Multiple cutting of gear blanks with an oxy-acetylene machine equipped with three blowpipes.



parts are to be shape-cut from sheet and light plate, it has been found practical to increase production by stacking a number of sheets together, making one cut through the stack in the same manner as through solid material. This process, known as stack-cutting, has made practical the cutting of very light material, and has increased the production capacity of oxy-acetylene shape-cutting machines.



This Oxweld Acetylene Cutting Machine is making a diagonal cut without a template with the blowpipe set at a compound angle.

Gouging

The gouging process, which is a special application of the oxy-acetylene cutting process, may be used to remove large quantities of steel rapidly and economically, and to rough-shape any article, thus radically reducing machining time. Different nozzles are available to permit gouging of various widths and depths. This process is used for preparing plate edges for welding, for making oil grooves in steel plate, for the removal of temporary welds, and for preparation of cracks in steel castings for reclamation by welding.

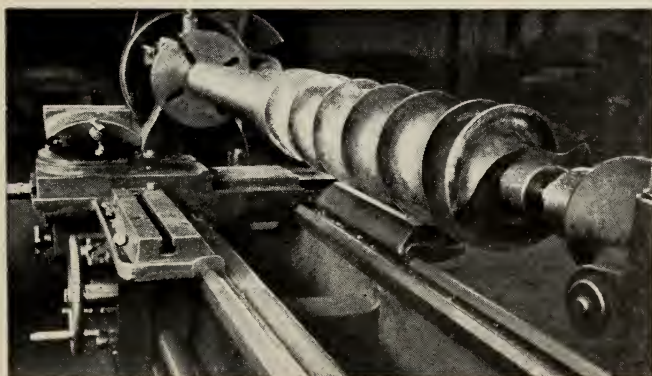
Flame-Hardening and Flame-Softening

Flame-hardening is a process whereby the surface of a quench-hardening, ferrous material is heated above its upper critical temperature by means of oxy-acetylene flames and then subjected to a suitable quench. The process produces a hardened case of the same chemical composition as the base metal. By this method, it is possible to produce a hard surface on large machine parts that are extremely difficult to heat treat selectively by other methods. The resultant hardness is comparable to that obtained by the conventional furnace hardening. Because the steel is quickly



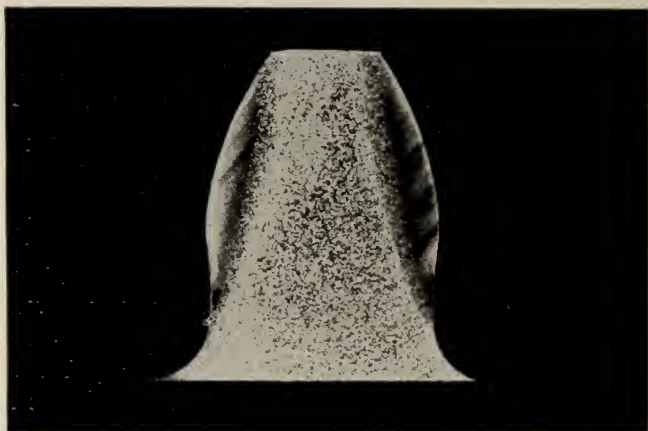
Each splineway, about 3 in. wide and 12 in. long, required only 30 minutes to groove by gouging, and only a light grinding was necessary to finish the shaft for service.

raised above the critical temperature and then quenched, the flame-hardened parts are free from scale, and distortion is generally well within manufacturing tolerances. Flame-hardening is used for such equipment as tank tread grousers, tank sprocket teeth, automotive valve stems, and bearing surfaces on shafts and crankshafts, small gears, and rollers.



This extruder screw is given increased efficiency by flame-hardening the outer edges of the flights.

The same oxy-acetylene equipment used for flame-hardening may also be used to reduce locally the hardness of a metal surface. The process, known as flame-softening, is frequently employed to soften cut edges of hardenable steels, for the local softening of final electric weld passes, and for such work as the softening of flame-cut riser pads to facilitate subsequent machining. In practice, a similar technique to hardening is used except that a lower heating temperature is employed and the steel surface is not quenched, the resultant slow cooling giving the desired annealing effect.

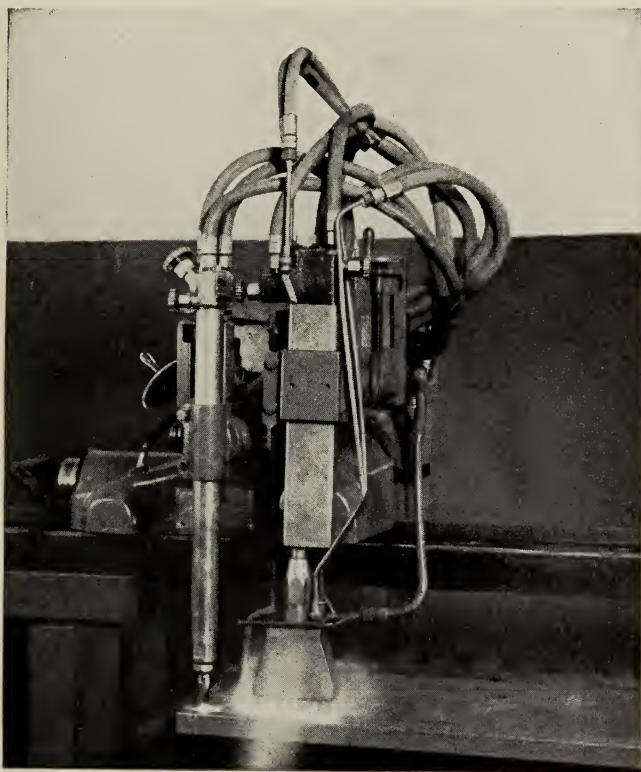


This etched cross-section of a gear tooth clearly illustrates the hardened areas.

Flame-Priming

High-velocity oxy-acetylene flames are used for flame-priming steel surfaces prior to painting. The scrubbing action of the flames removes the loose scale, rust, and surface moisture from the steel, thus making the paint go on faster, bond tighter, and last longer. Further, flame-priming warms the surface prior to painting, which allows satisfactory painting over extended weather conditions. A great deal of this work has been done on structural steel surfaces, such as bridges, dam gates, and water tanks, which require a protective coating of paint because of the corrosive conditions to which they are subjected.

In conclusion, it is well to mention Unionmelt welding, although it is not an oxy-acetylene process. This is an automatic electric process in which there is no visible evidence of current between the welding rod and work-piece. The welding rod is not in actual



The flame-softening process widens the use of low-alloy steels for structural purposes.

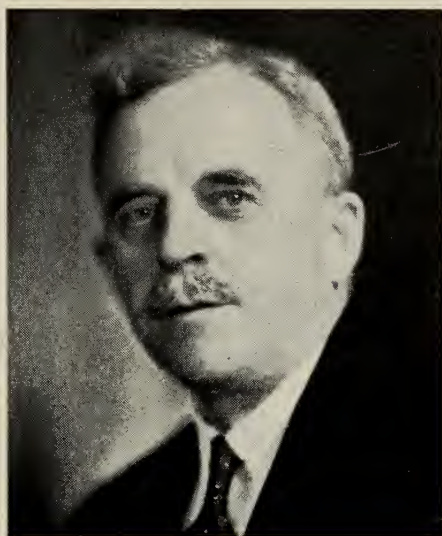
contact with the work-piece, but the current is carried across the seam to be welded through a special granulated material known as Unionmelt. The granulated material is the basic feature of this method of welding, making possible the special operating characteristics which distinguish the process, with the result that, once the current and speed values are established, the human element is eliminated in producing good welds.

Conclusion

It will be readily understood from this brief summary of some of the newer applications of the oxy-acetylene process, that no one application has been described in detail but a general outline has been given of the many and continual advancements that are being made to extend the use of oxy-acetylene flames in modern industry. Process service literature describing these applications in detail is available upon request.

The oxy-acetylene blowpipe has often been termed the "universal tool of all industry" because of the ready facility with which it can sever and join metal. However, the over-widening applications of the oxy-acetylene process now extend well beyond the welding and cutting fields, so that the term "universal tool of all industry" is even more appropriate to-day.

IN MEMORIAM



In the death of Professor J. Ellis Thomson, on Tuesday, September 26th, 1944, this faculty lost a most loyal and active member of its staff.

He will be remembered by those fortunate enough so come under his tuition as a humorous well-informed lecturer, with a friendly human understanding of the students' problems.

Professor Thomson graduated from the School of Applied Science in 1907 and continued post-graduate studies at Columbia University, the Bergakademie in Freiberg, Saxony, the University of Heidelberg, and Harvard, where he received his Ph.D.

In 1912 he was appointed demonstrator in Mineralogy at this Faculty, in 1933 becoming Professor of Mineralogy and Head of the Department early in 1944.

He was also active in the Mineralogical Society of America, of which he was elected President in December, 1937; in the Royal Canadian Institute, the Faculty Union Club of the University of Toronto, and the C.I.M. of which he became a member in 1918.

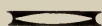
One of Canada's leading mineralogists and a pioneer in this country of the science of mineragraphy, he will be missed by all.

PROPOSED CHEMICAL ENGINEERING AND CHEMICAL BUILDING



Shown above is a sketch by Page and Steele, Architects, Toronto, of the proposed Chemical Engineering and Chemical Building, which, when completed, will stretch a full block along the north side of College Street from St. George Street east to the Mining Building. The left hand section of the building will be for work in Chemical Engineering while the right hand section will supplement the space for studies and research in Chemistry. The present Chemical Building will be attached to the wing of the new structure. The gross floor space in the new building for work in Chemical Engineering will amount to 97,750 square feet, while that for work in Chemistry will be 65,700 square feet. While no date has been set for the commencement of the new project, the plans are nearing completion so that work can be started early in the post-war period.

YEAR BOOK 1945



EXECUTIVES, CLUBS,
SOCIAL FUNCTIONS



ENGINEERING SOCIETY
THE UNIVERSITY OF TORONTO

ENGINEERING SOCIETY EXECUTIVE



Top Row: H. R. AGNEW, P. H. AYKROYD, K. R. BRIGHAM, G. S. W. BRULE, C. W. DANIEL,
 I. ELLIOTT.
Middle Row: C. B. GILL, M. HEFFETZ, A. T. KLASSEN, A. C. MACDONALD, S. B. MACDONALD,
 M. D. McCULLOCH.
Bottom Row: R. F. MOORE, C. S. MORGAN, J. T. PICKARD, J. SERVICE, B. TAMBLYN, R. E. UPPER,
 D. A. WHITE.

ENGINEERING SOCIETY EXECUTIVE

1945-46

President.....	M. D. McCulloch
1st Vice-President.....	F. Belshaw
2nd Vice-President.....	W. Daniel (Accl.)
Secretary.....	E. Rumney
Treasurer.....	R. Tredgett

ATHLETIC ASSOCIATION EXECUTIVE

President.....	A. N. Campbell
Vice-President.....	N. J. P. Volpe (Accl.)
Secretary-Treasurer.....	K. Hendrick (Accl.)

EXECUTIVE 4T6

President.....	R. Davidson
Vice-President.....	D. A. Price
Secretary-Treasurer.....	J. C. Lomax
Athletic Representative.....	D. McMichael (Accl.)

EXECUTIVE 4T7

President.....	H. J. Hamm
Vice-President.....	L. R. Farquhar
Secretary-Treasurer.....	H. Ballou
Athletic Representative.....	R. J. Halliwell

EXECUTIVE 4T8

President.....	F. Godfrey
Vice-President.....	H. Koehler
Secretary-Treasurer.....	W. Hannah
Athletic Representative.....	J. R. McReynolds

CLUB CHAIRMEN

Civil.....	R. A. Weir
Mining and Metallurgical.....	E. W. Dafoe
Secretary-Treasurer.....	C. W. Eggert (Accl.)
Mechanical.....	G. MacIvor
Architectural.....	P. Tillman
Engineering Physics.....	J. Allingham (Accl.)
Industrial Chemical.....	H. R. McKnight
Electrical.....	J. J. Dravis
Aeronautical.....	A. J. Pudsey
Debates.....	R. Singer (Accl.)
Vice-Chairman.....	A. Milling
Secretary-Treasurer.....	C. A. Fry

PERMANENT EXECUTIVE

President.....	W. G. Tamblin
Vice-President (2).....	R. F. Moore
	D. D. Currie
Secretary-Treasurer.....	P. H. Aykroyd
Councillors.....	Dept. 1—R. E. Upper (Accl.)
	Dept. 2—P. S. Cross (Accl.)
	Dept. 3—P. Lockhart
	Dept. 4—H. Agnew (Accl.)
	Dept. 5—A. C. McDonald (Accl.)
	Dept. 6—T. J. Batke (Accl.)
	Dept. 7—C. S. Morgan (Accl.)
	Dept. 8—C. B. Gill
	Dept. 9—R. B. Taylor (Accl.)
	Dept. 10—J. S. Marshall (Accl.)
Bronze "S".....	V. M. Booth

CIVIL CLUB EXECUTIVE



Back Row: W. D. McMURTRY, G. T. HORTON, R. T. SHEPPARD, J. F. WALKER.
Front Row: PROF. C. F. MORRISON, PROF. T. R. LOUDON, R. E. UPPER, G. L. WALKER, R. A. WEIR.

CIVIL CLUB

Another year has passed in the history of School and the Civil Club, whether successful or not is not, for me to judge. To lay inference on the hardships of arranging meetings due to the war-time activities of School would be merely passing the buck, particularly as this is the fifth year of the war.

The Club started activities with an initiation stag at the Westmoreland Hotel on October 12th. Many and varied were the agonies endured by the freshmen so that they would be able to claim themselves true Schoolmen. This along with food and song provided a great evening for the 50 members present.

On January 10th, a dinner meeting of the Club was held at Hart House. The Club executive was introduced and then the guest speaker, Mr. A. H. Richardson of the Department of Planning and Development of the Ontario Government. Mr. Richardson gave an interesting illustrated talk on "Conservation." He stressed in particular the procedure, results and recommendations of the "Ganaraska Survey."

The next meeting was a smoker held in the Debates Room of Hart House on February 8th. Mr. R. W. Emery, an engineer of considerable experience in the Southern Hemisphere was the speaker. He gave us a very interesting travelogue on Trinidad and British Guiana. His talk was illustrated by slides of personal photographs and various other souvenirs he had collected in his travels.

The Club held its Photo Salon on February 19th. Much to the executive's bewilderment every entry was of the class "all work done by the individual." The Salon was officially opened with a dinner meeting at Little Bit of Denmark restaurant. The guest speaker, Prof. K. B. Jackson told us about the increased application of photography to industry stressing map-making and stereoscopic work.

It was deemed advisable by the executive to not have a formal field trip due to the war-time restrictions on travel.

Due to the necessity of early publication other scheduled meetings still to take place will have to remain unmentioned.

To all members of the Club executive, may I take this opportunity to extend my sincerest thanks for your splendid co-operation throughout the year; to the rest of the Club, every success.

R. E. UPPER, *Chairman.*

MINING AND METALLURGICAL CLUB EXECUTIVE



Back Row: E. W. DAFOR, P. S. CROSS, D. M. ARCHER, G. M. JOHNSTON, R. M. BROWN, R. W. FREEMAN.
Front Row: D. L. WATSON, MR. N. F. PARKINSON, C. B. GILL, R. B. TAYLOR, C. W. DANIEL.

MINING AND METALLURGICAL CLUB

Despite a rather limited club membership and correspondingly restricted funds, the M. and M. Club enjoyed one of its most successful years for some time past, and we hope that future club executives are as successful.

Much credit for the success of the Club this year we owe to our Honorary Chairman, Mr. N. F. Parkinson of the Ontario Mining Association, who was ever ready with needed advice, and was of unestimable assistance in procuring the excellent speakers who addressed our meetings.

Our activities for the year began with the Annual Freshman Reception, which was, as usual, well attended by representatives of other departments. This was followed by a dinner at Hart House at which Dr. L. M. Pidgeon of the Metallurgy Department gave us an insight into the workings of the National Research Council. At our next dinner meeting, also held in Hart House, we had Mr. A. K. Muir and Dr. A. D. Dadson, both of Ventures Limited as our guests. The subject of their talk was the Yellowknife Properties, and this was illustrated by a colour movie taken by Mr. Muir while flying over the region. The Annual Dinner, completing the year's activities, was also held at Hart House. Mr. W. Samuel of Steep Rock Mines Limited, gave an exceptionally fine address on the Steep Rock development, illustrating his topic with coloured movies which were spectacular, to say the least.

Several field trips were held throughout the year, the arranging of which we are indebted to Professor J. A. Newcombe and C. G. Williams. The first trip for the third and fourth years Metallurgists was to the Atlas Steel Company at Welland. This was followed by the fourth year Miners and Metallurgists journeying to Orillia, where they were most royally entertained by the Fahrloy and E. Long Companies. Third and fourth year Metallurgy then visited the Anaconda Brass Company in New Toronto, and fourth year alone went through the Carboly Company's plant. The fourth year miners completed the year's excursions by visiting the Canada Wire and Cable Company.

As the year and my term of office comes to an end, may I thank the Club executive, the year representatives, and my friends for their fine co-operation and support, and next year's executive, I am sure, will make up for any of my deficiencies.

C. B. GILL, *Chairman.*

MECHANICAL CLUB EXECUTIVE



Back Row: W. M. FLANAGAN, H. S. DAND, D. D. CURRIE, T. W. KNAGGS, D. A. PRICE, G. S. MACIVOR.
Front Row: PROF. G. R. LORD, L. E. ELLIOTT, PROF. D. D. PANABAKER.
Absent: W. J. W. REID.

MECHANICAL CLUB

The purpose of the Mechanical Club is to bring the students of all years, along with the staff together by way of monthly meetings. Generally, speakers are obtained from well-known industrial companies. The speakers give the Club members their experiences on subjects, which are not necessarily always of a technical nature. It is with this point in mind that the executive of the Mechanical Club have organized their meetings.

The first meeting was held at Hart House, November 9th. The speaker, Mr. W. J. W. Reid, Manager of Ordnance, Otis-Fensom Elevator Company of Hamilton, gave a talk, illustrated with slides on "Some of the Mechanical Difficulties Encountered in the Manufacture of the Bofors Gun." Mr. Reid is the Honorary Chairman of the Club and it was thought that a talk at the first meeting would be an excellent way to introduce our Honorary member.

The next meeting was held at Diana Sweets, Toronto, December 11th, 1944. Supper was served at 6 p.m. The speaker, Mr. W. Hall of Combustion Engineering Company, introduced by Professor R. C. Wiren, gave an excellent talk about Steam Generation. The talk, illustrated with slides, showed all features of boiler design, as well as describe apparatus in operation at various plants.

Through the kindness of Mr. A. C. Wickman (Canada) Limited, an excellent movie and demonstration of their product was shown in the Debates Room at Hart House, February 12, 1945. This meeting was run by the vice-chairman, Mr. G. MacIvor, and the speaker introduced by Mr. F. Adams. This was very instructive to Mechanicals as the various tool steels were explained.

The annual dinner of the Mechanical Club was held at the Carls-Rite Hotel, Monday, February 26, 1945. Mr. I. M. Bodine, Executive Engineer of Canadian Ice Machine Company was the guest speaker. He was introduced by the Chairman, and gave an insight to the problems confronting the graduate engineer on entry to industry. Mr. Bodine is well qualified to talk on this subject as he is directly connected with a graduate engineer training plan, sponsored by the Canadian Ice Machine Company. The speaker was thanked by Mr. D. Becks, Professor E. A. Alcut, Professor of Mechanical Engineering replied to a toast to the faculty proposed by Mr. D. D. Currie, fourth year representative. The meeting was closed as usual, with a lusty *Toike Oike*.

ARCHITECTURAL CLUB EXECUTIVE



Back Row: Miss P. Synge, J. Craig, Miss J. Robinson.
Front Row: P. Tillman, J. Storey, H. Agnew, W. Troniano.

ARCHITECTURAL CLUB

Following the tradition established over a considerable period of years, the Architectural Club started off its year's activities with the usual enthusiasm and determination by the executive to really make the Club a part of student life. This mood engendered a club field trip to see and study the planting of the famed Ramona Gardens.

Unfortunately, soon thereafter the working mood seemed to possess everyone, and regular meetings were scant. Actually our gargantuan first year may have over-awed us, for 26 frosh worrying audibly about exams can discourage the best plans for other activities. After Christmas, however, the first year had found they hadn't failed, the upper years figured they were bound to anyway, and club spirit perked up.

The students spent considerable time doing the decorations for the School At-Home and also finally got the Sample Room organized sufficiently well that we are now not ashamed to leave the door open. The junior years have filed away all catalogs and samples and the upper years have been carrying on extended negotiations for furniture and good sets of working drawings.

At the Club's suggestion drastic alterations were made to our drafting rooms; wall length display boards were hung in two rooms, and a sound baffle was built between the first year room and the fifth year room. It is debatable which is the more noisy, but anyway it seemed a good idea at the time.

The Club wound up its year with a final resurgence of enthusiasm. We had several lively meetings including one at which "The City" was shown, and as a winder-upper, a gala banquet. Before concluding, we three who are graduating wish the very best to the other architectural students, and bigger and better meetings to the Architectural Club.

ENGINEERING AND PHYSICS CLUB EXECUTIVE



Standing: G. E. NOAKES, W. R. J. BROWN, R. R. GALPIN.
Sitting: J. F. ALLINGHAM, PROF. V. G. SMITH, A. C. McDONALD, M. E. BAKER.

ENGINEERING PHYSICS CLUB

During the past academic year, the executive of the Engineering Physics Club has endeavoured to broaden the University life of its members with both educational and social activities. The policy of the Club with regard to educational activities has been to deal with subjects which are non-technical and which may be received by all members on a more or less equal educational basis.

The annual fall term banquet of the Club was held on March 12th, 1944, in the Great Hall of Hart House. Speakers for the evening were Honorary Chairman Professor V. G. Smith and guest speaker Dr. L. Gilchrist, who, as originators of the Engineering Physics Club, outlined its relatively brief history and merits. The freshmen were duly and enthusiastically welcomed into the Club during the latter part of the evening.

On October 31st, 1944, a most successful dance was held at Ramona Gardens.

Professor E. Haultain addressed the Club on November 15th at Hart House. His subject was "Ourselves," and was followed by a very interesting discussion in which all members participated.

A sleigh-ride on February 3rd at Glen Mawr Riding Academy was enjoyed by many members of the Club and welcomed as a very pleasant diversion.

The plant of Rogers-Majestic Limited was visited by students of the fourth year on February 5th, a field trip which proved to be both entertaining and instructive.

To conclude the social events of the year, another successful dance was held at Ramona Gardens in conjunction with the Aeronautical Club on February 22nd, 1945.

Professor K. B. Jackson, head of the Engineering Physics Course, held an informal discussion with members of the 3rd and 4th year on March 5th, in which he outlined some of the problems confronting the engineer after graduation and discussed the present status of the Engineering Physics Course.

The final banquet of the Club was held on March 12th at the Diet Kitchen. Guest speaker for the evening was Professor H. Underhill of the Department of History who spoke on "The Big Three" as a topic of general interest.

INDUSTRIAL CHEMICAL CLUB EXECUTIVE



Standing: D. W. CARRUTHERS, B. HAMM, D. A. CAVANAGH, R. L. JONAS, P. HAFEEY, A. COOKE, N. VOLPE.
Sitting: MR. A. B. LOCKLEY, K. R. BRIGHAM, PROF. W. J. MACDONALD.

INDUSTRIAL CHEMICAL CLUB

The activities of the Club commenced for the '44-'45 season on November 2nd at a club smoker held at Little Denmark at which time the Freshmen were received into the Club in a manner befitting an engineer.

On November 8th a smoker was held in Hart House Debates Room at which Mr. Buchan of Bakelite Corporation enlightened the Club members of the production of plastics accompanying his speech by two films entitled "Formica" and "Bakelite".

The next meeting consisted of a dinner meeting at Diana Sweets on January 25th. Mr. A. B. Lockley, the Club's honorary chairman of Goodyear Rubber Company, spoke on synthetic and natural rubber and their application in the world of to-day and to-morrow.

In so far as field trips were restricted due to war production, some thirty members of the fourth year enjoyed a trip to the Imperial Oil and Polymer Synthetic Rubber plants at Sarnia in November. The final meeting of the Club was held in the Mining Building at which Dr. Lucas, assistant professor of pharmacology gave an address on chemical poisoning.

Mr. A. B. Lockley and Professor W. J. MacDonald supported the Club this year in the positions of Honorary Chairman and Honorary Vice-Chairman, respectively.

The executive of this year wish to extend the best wishes for success to the future executives and hope that they will not be curtailed on account of wartime restrictions.

ELECTRICAL CLUB EXECUTIVE



Back Row: G. R. SLEMON, A. P. QUENTIN, J. A. ELWOOD, G. R. MARKOW.
Front Row: G. R. FAIRWEATHER, M. J. MCHENRY, C. S. MORGAN, PROFESSOR A. R. ZIMMER, G. A. MACKIE.

ELECTRICAL CLUB

The Electrical Club, composed of over two hundred undergraduates in Electrical Engineering, is organized to plan and execute the extra curricular activities of the students in all four years of the course. Interest in the less technical aspects of the engineering profession is promoted by inviting competent speakers to address the Club at its smokers and dinners. Field trips to industrial organizations are arranged, thereby giving the students an opportunity to see engineering in action. Social events are also planned to round out the full sphere of extra curricular functions.

The Freshman Reception Dinner and Meeting opened the year's activities early in October. Professor Loudon gave an address on what the undergraduate should expect to obtain from his career at "School." Our Honorary Chairman, Mr. M. J. McHenry, of the Hydro Commission, presented his views on the engineer's increasing responsibilities in society, in a friendly "fire-side chat" at the November smoker. The December activities took the place of field trips to various manufacturing establishments. Lincoln Electric Co. and Canadian General Electric Co. of Toronto, Steel Co. of Canada and Canadian Westinghouse Co. of Hamilton, were the plants visited. A most hospitable reception by the eds and co-eds of McMaster University was one highlight of the Hamilton trip, as many of the third and fourth year men will testify.

During the winter term, further demonstrations of engineering at work were given by trips to radio station CKEY, Canada Wire and Cable Co., and the T.T.C. repair and maintenance shops. A dinner and an entertaining address by Mr. R. Hodgetts of the Department of Political Science on "Canada's Place in Keeping the Peace," formed the nucleus of the regular January meeting. Four fourth year men presented papers at the annual February joint meeting with the Toronto Section, American Institute of Electrical Engineers. Great interest was shown by our graduate elders in the students, and a fine opportunity for exchange of ideas was thus afforded.

At this conclusion of another term, your chairman wishes to thank his executive for their whole-hearted co-operation, Mr. McHenry for his kindly assistance, and all those who contributed to the Club's endeavours during the season. May the 1945-1946 session be even more successful.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
(STUDENT BRANCH)



Back Row: G. CAMPBELL, R. KINSINGER, A. DALRYMPLE.
Front Row: D. ALLOWAY, A. HAMILTON, PROF. I. W. SMITH, D. ELVES, G. FREY.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS STUDENT BRANCH

The student branch of the American Society of Mechanical Engineers was started on this campus by Professor Angus in December, 1933, and had been an integral part of the Department of Mechanical Engineering since that time. Second, third and fourth year students may join, and membership in the Society includes the regular monthly issue of *Mechanical Engineering* and a membership pin. Also, a great deal of other technical literature is obtained by the branch and distributed to the members.

The parent Society, with headquarters in New York, backs the Student branches financially, and sponsors a student branch Convention each spring, as well as a special student meeting at the Annual A.S.M.E. Convention. Student members are not required to pay the initiation fee of \$10.00 when they become Junior members upon graduation.

Meetings this year included a joint dinner meeting with the Mechanical Club and a meeting at which Mr. M. J. Aykroyd, past President of the Association of Professional Engineers of the province of Ontario, discussed the work done by that Association and its importance to the graduating engineer.

The 1944-45 executive is:

<i>Honorary Chairman</i>	PROFESSOR I. W. SMITH
<i>Chairman</i>	A. R. HAMILTON
<i>Vice-Chairman</i>	D. C. ELVES
<i>Secretary-Treasurer</i>	G. W. FREY
<i>Papers and Meetings Secretary</i>	D. M. ALLOWAY
<i>Fourth Year Representative</i>	R. E. KINSINGER
<i>Third Year Representative</i>	A. E. DALRYMPLE
<i>Second Year Representative</i>	G. C. CAMPBELL

AERONAUTICAL CLUB EXECUTIVE



Back Row: A. J. PUDSEY, J. S. MARSHALL, W. G. CARTER.
Front Row: M. HEIFETZ, R. DAVIDSON.
Absent: PROF. T. R. LOUDON, E. L. DAVIES, J. P. FOSTER.

AERONAUTICAL CLUB

This year saw the formation of the Aeronautical Club, which took its place among the clubs associated with the Engineering Society, in an endeavour to provide the students with a suitable medium for furthering their association with their fellow students and members of the profession.

The first few months of school were fully occupied with the details of organization, the Club being formally approved by the Engineering Society at a general meeting in November. This month also saw the first general meeting of the Club at which our Honorary Chairman, Professor T. R. Loudon, was guest speaker. The freshmen were received in the traditional manner by the second year, after the meeting. Towards the end of the month, the upper three years went on a field trip to the De Havilland Aircraft.

During December the first year went for a visit to Victory Aircraft at Malton. Our first general meeting of the new year was held on January 23rd with Mr. J. D. McCurdy as guest speaker. He spoke on "Canada's Role in Aviation History."

A dance was held on February 22nd in conjunction with the Engineering Physics Club at Ramona Gardens. All those who attended had a very enjoyable time.

The final meeting of the year was a dinner meeting at Hart House. Mr. R. B. McIntyre of De Havilland Aircraft Company was guest speaker. He spoke on "What is an Engineer?"

It will be realized that the difficulties inherent in an organization's first year coupled with the financial limitations of a relatively small enrolment do not help in the arrangement of a full calendar of activity, however a fair start has been obtained and success should be assured for the future.

The choice of Amos Pudsey as President for the coming year is excellent, and given as much co-operation from his executive as was obtained from this year's, I am sure he will prove a truly worthy chairman.

In concluding, I would like to take this opportunity to express the appreciation of the executive to Professor Loudon and to all those who helped establish the Aeronautical Club on the Campus.

M. HEIFETZ

DEBATES CLUB EXECUTIVE



Standing: H. KOEHLER, A. H. MILLING, H. K. WARDELL, C. A. FRY,
Sitting: DR. L. E. JONES, MISS S. B. MACDONALD, R. A. SINGER.

DEBATES CLUB

The Debates Club is still on the upswing of a revival started last year under Gord Gilchrist. This year we tried a new feature, the Parliamentary form of debate (stately, yet with the School touch).

Under a series of distinguished Prime Ministers, the House vigorously supported intercollegiate sport, tolerance of sweaters on the campus, and compulsory sport: the justice of the divorce laws and a co-educational Hart House were contested more closely. The most serious session was on federal control of education. This was held with the Medical Arts and Letters Society. The House also sponsored an impromptu speaking contest among the lower years. At the time this goes to press, an impromptu speaking contest is about to be held for the Silver Cup.

This year, also for the first time, the Club joined the Inter-faculty Debating Union and saw some of the rest of the campus. Schoolmen led in debates on the relative value of arts and science educations (waving slide-rules and stethoscopes) and on compulsory undergraduate war service.

Bright memories of the season will be the stormy campaign for sweaters on the campus (and Pete Cahn's difficulties with the fig leaf)—Don Mulholland's fine speech up at U.C. on the undergraduate military training, and above all, Prime Minister Bill Tambllyn's resounding denunciation of U.C. for the theft and misuse of the School cannon. Other notable leaders in the House (roughly in order of appearance) have been Cy. Fry, "Wacky" Taylor, Pegeen Synge, Art Jackes, Fred Kahn, Harold Wardell, Murray Lount, Ken Jay, Jack Jarrel, Bill Neale, Al Milling, Bill Dimma, Ed Fraenkel, Harold Koehler and Bill Walker. The speakers from the floor have been excellent and enthusiastic but too numerous to name.

The executive's warmest thanks go to Dr. L. E. Jones who joined us after Christmas when our first fine careless enthusiasm was somewhat frayed, and brought so many new sound suggestions.

My personal thanks go to the members of the executive, especially Bob Singer and Cy. Fry, for their solid work that put things over this year. The members of the incoming executive elected so far are Singer, Fry and Milling, to whom I wish a most successful season next year.

SALLY MACDONALD, *Chairman.*

TOIKE OIKE STAFF



Left to Right: R. A. GROSSKURTH, J. N. HARSHAW, T. E. MUNFORD, G. ROSENTHAL, J. D. WRAY.

TOIKE OIKE

This year, *Toike Oike*, School's informal newspaper, has once again been the herald of the more important events in the School year.

Printed in green ink to match the colour of the ties on its verdant crop of unschooled freshmen, the Freshman Edition welcomed them with a summary of the laws governing freshmen behaviour and the inevitable list of supplies which might be purchased at the Engineering Society Store.

After the annual campus-wide tie-clipping skirmishes, *Toike Oike* again appeared to give news about the freshmen's formal initiation which was to make him a full-fledged Schoolman with all the privileges entailed.

On the event of School Dinner, when Dean Wickenden of the Case School of Applied Science was guest and speaker, *Toike Oike* was again issued, this time in the form of a dinner menu.

The next big School event was School Nite, for which *Toike Oike* printed the programme. The last issue to the date of writing was the Home Edition in which everyone was urged to attend that biggest of School dances.

Yet to come are the Election Edition, the Graduation Edition and a second Freshman Edition. This second Freshman Edition is necessitated by the arrival of a number of ex-servicemen who will be taking a refresher course here during the summer.

In accordance with the precedent set last year, *Toike Oike* is issuing a magazine to give those Schoolmen with a bent for writing, an opportunity of seeing themselves in print. Publication is expected during the middle of March.

SCHOOL DINNER COMMITTEE



Back Row: M. D. McCulloch, E. M. Peacock, G. D. Keary, C. T. Millen, W. M. Kerrigan, R. T. Sheppard.
Front Row: P. H. Aykroyd, J. T. Pickard, R. F. Moore, W. G. Tambllyn, L. E. Venghiarutti.
Absent: K. F. Jones, D. D. Currie, J. E. Owen.

55TH ANNUAL SCHOOL DINNER

Thursday, November 2nd, brought around the long famous Annual School Dinner held in the Great Hall at Hart House. The annual Auction Sale, where all but the Don Jail are sold, started things rolling early in the day. By the time the Schoolmen were ready for the delicious chicken dinner, all had had a riotous day.

Among the guests were President Cody, Dr. W. E. Wickenden, Dean C. R. Young, Dr. S. Smith, Dean S. Beatty and Dean Cosens.

Following toasts to the King and to the President of the United States, Dr. Sidney Smith presented Scholarships and Gold Keys.

The guest of honour, Dr. W. E. Wickenden, President of the Case School of Applied Science, Cleveland, Ohio, gave a speech that everyone thought was tops. He defined and illustrated the role of responsibilities of the engineer in the post-war world. In opening his address, Dr. Wickenden said that there are many problems for the engineer in the post-war world, of which reconversion will be the chief and most pressing, and that economic collapse in the reconversion would be catastrophe. For this problem, Canada will be better equipped in engineering brains and skill than the United States because in Canada engineering education has been safeguarded, he said.

Another problem of immediate interest will be that of disposing of the high stocks of war material now piled up in ordnance depots of the fighting nations, said Dr. Wickenden.

Concluding his remarks, the speaker noted a new sense of heightened responsibility for the engineer of to-morrow, "new levels of literary and new levels of technical endeavour," and that only by common participation in disposing of these problems could the engineer overcome them.

President H. J. Cody, in reply to a toast to Varsity, expressed his gratitude to the Faculty in general for its co-operation with him in his tenure of office as President, which he will shortly vacate.

Following Dr. Wickenden's address, some novel entertainment was supplied by a very versatile gentleman who played at least a dozen different musical instruments. Mr. Bob Moore did an excellent job as chairman and arranger of the dinner. Much applause need be given to the School Dinner Committee, which ran the whole affair through without a slip-up.

The evening's proceedings were formally brought to a close with a rousing Toike Oike, voiced by all the Schoolmen.

SCHOOL AT-HOME COMMITTEE



Back Row: C. S. MORGAN, H. R. AGNEW, A. T. KLASSEN, P. H. AYKROYD, L. E. VENCHIARUTTI, R. G. PATERSON, J. J. DRAVIS.
Front Row: M. D. McCULLOCH, J. T. PICKARD, R. F. MOORE, R. T. SHEPPARD, G. D. KEARY, D. A. WHITE.

SCHOOL AT-HOME

On the evening of Thursday, January 18th, 1945, Schoolmen and their ladies gathered at the Royal York Hotel for the festive annual School At-Home. Dress was again informal, in keeping with war-time proprieties, but the glamour of a formal occasion was not allowed to lag.

Each lady present picked herself a corsage from a trellis of flowers. A professional floor show of a dance team, a comedian and an acrobatic act entertained during the intermission. Record albums were presented as prizes to the fortunate winners in a lucky number draw.

The decorations around the dance floor, done by the Architects, consisted of cartoons depicting typical scenes in the lives of men in the different departments. It made us want to switch to Ceramics.

Delegates from the faculties on the campus as well as from various out-of-town universities joined the Schoolmen in their revelry.

Patronesses of the evening were: Mrs. H. J. Cody, Mrs. C. R. Young, Mrs. Sidney Smith, Mrs. W. S. Wilson, Mrs. T. R. Loudon, Mrs. W. M. Treadgold, Mrs. W. J. T. Wright, Mrs. C. G. Williams, Mrs. E. A. Allcut, Mrs. R. C. Wiren, Mrs. H. H. Madill, Mrs. K. B. Jackson, Mrs. R. R. McLaughlin, Mrs. A. R. Zimmer, Mrs. L. M. Pidgeon, Mrs. C. F. Morrison, Mrs. J. W. Bain, Mrs. J. R. Gilley.

SCHOOL NITE COMMITTEE



Back Row: J. B. TEMPLETON, R. G. PATERSON, R. E. UPPER, E. M. PEACOCK, K. R. BRIGHAM, L. E. ELLIOTT, M. D. McCULLOCH, J. R. CLARE.
Front Row: A. A. ALLAN, R. T. SHEPPARD, J. T. PICKARD, R. F. MOORE, MISS S. B. MACDONALD, R. A. WEIR, A. C. McDONALD.

SCHOOL NITE

And what a nite it was! The house lights dim, the curtain is drawn and we are before the little Red School House still standing in 1992.

Dean Young and Tommy Loudon are stumbling through a few verses of Columbo, a reporter is stumbling through hundreds of pages recording this thrilling adventure, a mechanic is stumbling through his box of wrenches while checking the rocket ship, and the fliers—well, they're just stumbling! They set sail from this good earth in a blaze of glory—on to Venus was the cry!

But their flight was stopped in the second fiasco where the audience caught a glimpse of the boys on the journey. There they were taking life easy out in space, drinks at their beck and call, pretty gals hanging on the wall, a perfect Utopia and a sure cure for the pre-exam blues. But the examinations on Venus were of a different nature. The seven lovelies on the planet had never seen men. What a test! Needless to say, the fliers all passed with honours. But they paid dearly for their high living. The Venus Defense Army soon put a stop to their frivolities and the poor boys had to leave Venus toot sweet (or Blow, Gabriel, Blow)!

On their return to earth, engine trouble caused a terrific explosion and the boys were sort of mangled. They dropped in, that is their souls dropped in, to a little roadside hotel and there they found the devil and St. Peter calmly rolling the bones to see who was going to take the next shipment. The boys stood around breathlessly as the man with those big horns rolled a juicy "natch." Over the roaring of the furnace and the tinkling of the bottles could be heard the guttural voice of Mr. D., "Burn, you bums, burn!" So it ended.

Everyone left the theatre wondering where all the beautiful gals came from, what the difference between men and women really is, were those dice loaded? All in all it was a stupendous, colossal production which many will remember as the best comedy production they have seen.

To top the evening off, there was the tripping of the light fantastic to the music of Bert Niosi in the Big Gym, Jack Evans in the Upper Gym, Hannigan's Mountaineers in the East Common Room, and the All-Night Record Men in the Music Room. In fact, there was a down beat for all feet. For those who were looking for a little relaxation, there were movies in the Great Hall and the Mermaids turned a shapely ankle in putting on a display in the tank. The

cartoonist kept the moving crowd amused by sketching any prominent profiles who had dreams of becoming comic book heroes, whereas those who desired the ultimate in romantic ecstasy groped through darkness to the "Smooch-Room."

Adding the highlights of the evening up, there is no doubt that it was a night to remember.

The stage crew certainly deserve bouquets for the mammoth job they undertook and carried out so well, and the members of the cast and orchestra also rate a large thank-you for their part on that nite of nites.

The Patrons and Patronesses were: Dr. and Mrs. H. J. Cody, Dr. and Mrs. Sidney Smith, Dean and Mrs. C. R. Young, Lieut.-Col. and Mrs. W. S. Wilson.

R. T. SHEPPARD.



WOMEN'S UNDERGRADUATE ASSOCIATION

In 1941 and 1943, the unwary Transactions reporters gaily pranced up to us, desiring to know many embarrassing statistics, even to our age and our views on marriage. After fruitlessly questioning for half an hour, these unfortunate fellows had to be gently lead away to a padded cell. A resume of the formation and activities of the Women's Undergraduate Association in S.P.S. seems to be more in keeping with the School tradition than the former type of article. This is one way in which the Club hopes to contribute to School life very much in the same way as every other club within the school. Its members are tremendously proud of being a part of this progressive and prominent Engineering faculty.

The most logical, and the question most frequently asked of students is "Why are you here?" Everyone has a different reason. Some have always yearned for their chosen profession, some, by virtue of their training and their talent are best suited to such a course; others, through long experience in business have realized that occasionally women DO HAVE to work, and then, education is assurance of a vital living, and insurance against misfortune.

In the winter of 1937, two high school girls were getting their coats in the Art College basement, having spent the usual Saturday morning puddling in poster paint. One claimed that she had always wanted to be an architect. The other was horrified that anyone would want to spend their life drawing straight lines. But the idea was not dropped, and in the fall of 1940, the two of them plunged into the shadows of those famous halls of men. And shadows they seemed, for everywhere you looked, all you could see was an ever-changing silhouette of masses of people. Stumbling through the crowd, you found a desk on which to perch while Dean Mitchell and various professors opened School with the welcoming address.

Everything everybody did was an occasion for a mob scene of some kind. In one of those struggles at the Engineering Society Store we were approached by the famous Sally, of whom we had heard so much from the awe-stricken Meds. Her brisk suggestion was that we acquire green ties—our freshman initiation. We have not yet broken the habit of entering by the back door!

As for our seniors, we regarded them with distant respect, even the few times we lunched together.

WOMEN'S UNDERGRADUATE ASSOCIATION



{ Left to Right: MISS JOAN ROBINSON, MISS ALICE AYER, MISS CYNTHIA ALLUM POON.

In 1943, a beautiful and clever high school kid, Marg. Beedham, broke all precedent by being elected secretary-treasurer of 4T6. This example was followed by Marcia Lamont—Civil 4T7, and by Sally MacDonald as chairman of the Debates Club.

In 1943, the School seemed to be mobbed by women. To the old standard courses, Architecture, Chemical Engineering, Electrical and Engineering Physics, they added Civil and Mechanical, and to these the following year, Aeronautics and Ceramics.

1943 was the year that started the ball rolling. Sally held an open house every Tuesday noon, and here it was that we old dead-heads got our eyes opened to the fact that freshmen expected more of the U. of T. than they had found—communal living quarters and eating halls, initiation, sports, and slightly more commodious washrooms.

On March 13, 1945, the election dinner was held at the Diet Kitchen. Mrs. Hampson of the Chemical Engineering staff gave an interesting impromptu address. The election results were as follows:—

<i>Chairman</i>	Joan Robinson
<i>Secretary-Treasurer</i>	Cynthia Allum Poon
<i>Athletic Representative</i>	Persis Hughes

In future, we hope to have a more inspiring place for meetings than the second floor exhibition room. Means should be found to finance a dinner with a prominent speaker. These speakers might even come from our own graduates, such as Marty Stewart Leitch—now studying housing on a scholarship in England; Claire Jones—doing chemical engineering research for the Anglo-Canadian Pulp and Paper Company in Quebec City.

As for the two characters who started out in this story, they hope to leave the shadows of these great halls this spring. Pegeen Synge most certainly will, after five successful years in which time she won both the O.A.A. scholarship and the Toronto Brick Prize. The other—is signing off anyway—with the hope that this Club will be of increasing satisfaction both to School and its members.

ALICE ANN AYER,
Chairman.

SURVEY CAMP, 1944



SURVEY CAMP, 1944

The Civils and Miners of the Class of 4T6 migrated to Gull Lake in the year '44 to run in curves in the daytime and so it is was rumoured also to study curves at night. From the construction camps and war plants of the country they came on foot, in jalopies, (on foot), by train and bus and via the well-known thumb. Strange trunks and boxes accompanied the boys, some of which emitted muffled clinkings and gurglings. Also with them was the new instrument known in scientific circles as the "Angle Dangler," developed by the hard-working(?) transit-toting engineers to measure the proximity of heavenly bodies.

Our first nocturnal excursion was, of course, to Deer Lodge, Wig-a-Mog and surrounding cabins (woof-woof!). Our predecessors had always been "warmly" welcomed so we set out to raise a little bit of H— ourselves. The transportation problem was solved by either "Chunky's" B-B, Al's Gypsy, "Shep's" Ford or Harry's Relic which ran direct bus service every night. Our one difficulty was a certain proprietor of a certain leading Haliburton lodge who insisted we go home and sleep in our own beds. But as "Doc" so aptly put it one night:

"You, sir, are a!"

As minds get rusty with age, here are a few highlights to mull over: Remember "Gaytimes" Vargas and his pitching ability; remember being wakened every morning by "Count" Lount's early morning newscasts—and the rush for breakfast! How could we forget Shep's birthday—everyone got dunked; and did the two fresh-air fiends, "Mull" and Schneider, really enjoy their sleep on the dock? Ah, yes, the Polar Bear Club—how long did it last, one night or two? We wonder if "Omar" had trouble sleeping after the show and by the way, how did he get the name? Remember those Sunday evening baseball games over the hill and remember over the hill—those weiner roasts (M-m-m)? Did the Gypsy really break down two nights in a row or couldn't the boys tear themselves away from their "amours"? Famous first words of one "Rocky" Evans will long be remembered as starting one of many long-past midnight session:

"L-L-Let's have a poker game," quoth the embryo rodsman—and speaking of games of chance, who owned the galloping dominoes that always "natched" for Hugh "Leheigh" Boyle? Of course,

the highlight of the season was the Bunkhouse Brawl—remember—who had the keys with the bottle opener attached? And how did Fred Patterson make out with that “shy young thing” from the local drugstore? Oh yes, did Claude Nelson ever get to Chicago?

The following is a conversation heard one night in a well-known Minden nightspot:

“I tell ya, the kid’s overboard,” said the first character.

“Oh, feel your head,” replied the second.

A third character, after due consideration of innumerable green containers in front of him, remarked:

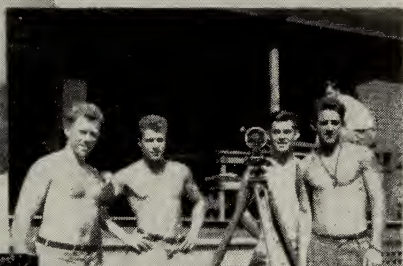
“I guess this just isn’t one of my drinking nights,” and ran his fingers through thick red curls.

We had with us this summer five surveyors from the West Indies—Jim Waight, R. Johnson, Orville Rogers, Wes. Lord, and J. deFigarelli. They certainly were good sports and joined in all our fun. We wish them the best of luck and hope they enjoy their stay.

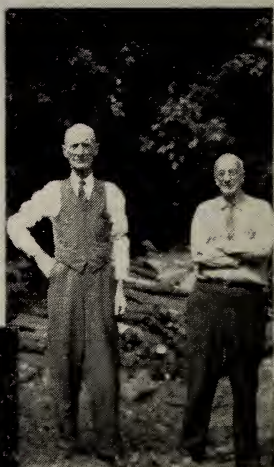
The work—oh yes, we did work sometimes too, but all in all we had a wonderful time—six weeks in a lifetime!

R.G.P. & W.T.McB.

SURVEY CAMP, 1944



SURVEY CAMP, 1944



THE VARSITY CHRISTIAN FELLOWSHIP ENGINEERING BRANCH

This is the third year that the Engineering Branch of the Varsity Christianship Fellowship has been functioning, and it has proved again to be a source of real blessing to many fellows in Engineering.

Generally speaking, during the past year, the weekly meetings have been divided equally between study discussion groups and speaker meetings. Speakers who have addressed the group have been from many walks of life—sport, business, engineering and the ministry—and the message of them all was that Jesus Christ, God's Son, was the answer to life's problems, and that personal faith in Him resulted in the forgiveness of sin and gives a real purpose to one's life.

The testimony of any member of the group is, that to know Christ as a personal Saviour, is the greatest and most practical thing in life. This is summed up in Matt. 6:33—"Seek ye first the Kingdom of God and His righteousness: and all these things shall be added unto you."

As a part of the V.C.F. on the campus, the group has a part in the all-University program of special meetings, a Bible Lecture course, firesides, week-end conferences, parties, etc.

To any of the general Fellowship meetings or to those of the S.P.S. group, all undergraduates and members of the faculty are extended a warm invitation.

The executive for the year 1944-45 was: *Past President*, D. M. Alloway; *President*, R. E. Kinsinger; *Secretary-Treasurer*, F. G. Gilbert; *Membership*, T. A. Ramsay; *3rd Year Rep.*, J. D. Hisey; *2nd Year Rep.*, M. A. Hewgill; *1st Year Rep.*, M. G. Barrington.

R. E. KINSINGER

SOPH-FROSH DANCE

Friday, November 10th, was the time, the Royal York Hotel the place, of the outstanding fall dance of S.P.S.

At this time some 600 engineers and their one-night stands flocked into the banquet hall at the Royal York Hotel to knock themselves out for four solid hours to the music of Jack Evans.

The dance was a terrific success; a programme of special dances and a band-leading contest in which four Schoolmen took part, kept the crowd in a jovial mood all night.

As Jack Evans signed his name to a very successful Soph-Frosh dance, each and every Schoolman smiled sweetly as he thought of what was coming to him after he left the dance.

Among the patrons and patronesses were Dean and Mrs. C. R. Young, Wing-Commander and Mrs. T. R. Loudon, Lieut.-Colonel and Mrs. W. S. Wilson, Prof. and Mrs. W. J. T. Wright. Prof. and Mrs. W. B. Dunbar, Prof. and Mrs. A. Wardell, Prof. and Mrs. W. W. Huggins.

C. W. DANIEL,

GRADUATE'S ALBUM

4T5



ENGINEERING SOCIETY
THE UNIVERSITY OF TORONTO

GRADUATING CLASS—CIVIL ENGINEERING, 1945



Front Row:

J. T. PICKARD, PROF. M. W. HUGGINS, PROF. R. F. LEGGET, R. E. UPPER, PROF. P. V. JERMYN, PROF. T. R. LOUDON, PROF. C. F. MORRISON, G. P. DAVIDSON, D. M. VENTON.

Second Row:

G. D. KEARY, D. H. MACDONALD, H. H. TODGHAM, J. H. D. TEMPEST, T. A. RAMSEY, S. C. COOPER, C. A. PLAYLE, D. J. WALLACE, D. B. COLLINGS.

Third Row:

G. T. HORTON, W. K. SHARPE, A. K. ROWNTREE, H. K. CRAIBBE, P. H. AYKROYD, N. D. LEA, D. V. ANDERSON, A. A. G. JOHNS.

Fourth Row:

H. I. STRICKER, J. A. FARLOW, W. J. MITCHELL, D. M. GIBSON, G. L. BROWN, R. L. BOOTH, F. W. PATTERSON, G. L. THATCHER.

Inset: W. G. TAMBLYN.

DEPT. MINING ENGINEERING—GRADUATING CLASS, 1945



Left to Right:

Front Row: J. R. CLAPE, PROF. S. F. WOLFE, PROF. J. T. KING, PROF. C. G. WILLIAMS, MRS. STARK (Secretary); W. W. MOFFAT, R. F. MOORE, MR. L. PANCER.

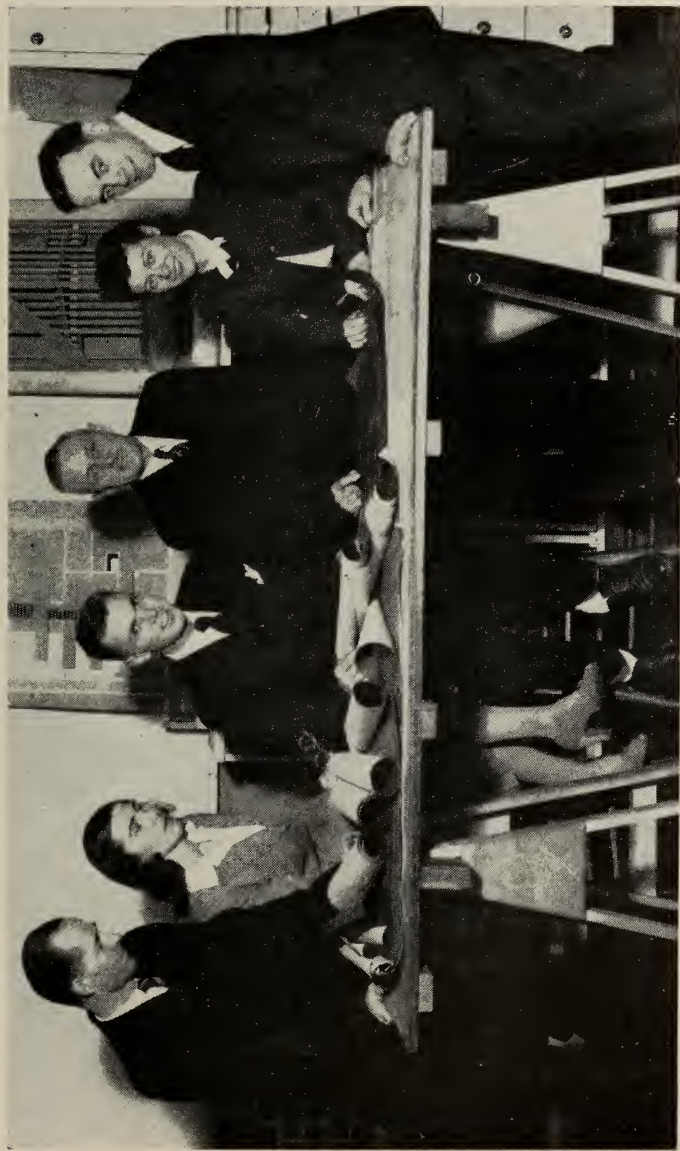
Back Row: P. S. CROSS, J. M. TURNER, J. H. BOYLE, MR. G. K. CLEMENT, MR. S. G. FARRAR.

DEPT. MECHANICAL ENGINEERING—GRADUATING CLASS, 1945



Front Row: PROF. I. W. SMITH, PROF. R. C. WIREN, PROF. G. R. LORD, PROF. E. A. ALLCUT, PROF. W. G. MCINTOSH, PROF. D. D. PANABAKER,
2nd Row: J. P. BLAYNEY, V. M. BOOTH, S. P. LOCKHART, K. MITSUI, B. C. PRICE, M. I. SPIEGAL, J. C. WHITEHOUSE, E. MATTHEWS,
3rd Row: H. BEKAERT, A. SANCIEMENTE, D. M. ALLOWAY,
4th Row: A. B. PATTERSON, D. E. BECKS, F. C. ADAMS, J. RAMSDEN, F. ROBERTS, C. T. JOHNSON, S. K. HERMAN, S. TAKAHASHI, R. S. MCNELLIS, W. A. FARNELL, J. FOREMAN, L. E. ELLIOTT,
5th Row: W. B. DROWLEY, C. E. LYALL, W. G. MCGORMAN, R. NICHOLSON, H. APPLETON, B. W. EAGLES, W. H. O'LOUGHLIN, J. A. STENHOUSE, T. K. BIRAS, D. D. CURRIE,
6th Row: J. R. HARVEY, W. E. CANNING, J. F. HADDY, L. JAMES, P. M. GILLESPIE, L. SCHEFFEL, C. J. RUMBALL, J. C. GRAY, H. D. CULHAM,
7th Row: M. J. O'REILLY, A. B. DANARD, J. A. LEGRIS, J. S. MOLONEY, W. E. MORLEY, J. R. PETRINEC, A. R. HAMILTON, S. L. KENT, G. E. CUFF, M. J. O'BRIEN,
Absent: G. W. FREY, E. L. CUDIN, R. E. KINSINGER, J. C. BOA, F. W. COLLYER, R. L. BAILEY, C. H. KILLORAN, W. STEELE, E. M. PEACOCK.

V YEAR ARCHITECTURE



Left to Right: Prof. E. Carswell, Miss A. A. Ayer, Mr. H. R. Agnew, Col. H. H. Madill, Miss P. Syngé, Mr. J. A. Murray.

FOURTH YEAR ENGINEERING PHYSICS



Left to Right:
Back Row: J. M. SPINKS, M. E. BAKER, PROF. K. B. JACKSON, PROF. V. G. SMITH, J. E. NOAKES, A. C. McDONALD,
Second Row: D. F. D'ARCY, G. N. BOYD, J. T. DEWAN, K. N. STEVENS, L. A. KAUFMAN,
Front Row: G. B. W. MACSWEEN, MISS S. B. MACDONALD, W. M. KERRIGAN, E. J. FLYNICK, W. H. WALKER,

GRADUATING CLASS—CHEMICAL ENGINEERING, 1945



Left to right:
1st Row: PROF. E. A. SMITH, PROF. W. C. MACDONALD, DR. M. C. BOSWELL, MISS D. BIRKETT, PROF. J. W. BAIN, DR. R. R. McLAUGHLIN, MR. A. M. FITZGERALD.
2nd Row: MR. C. M. HUMBER, MR. W. G. MACELHINNEY, MR. A. S. HUNT, J. D. ROADWAY, P. F. FOLEY, D. BATES, MR. F. A. DEMARCO.
3rd Row: T. L. BATKE, W. J. BRANT, C. KAUFMAN, W. FLEURY, B. C. BARRINGTON, D. CATFORD, MR. F. KUBATH.
4th Row: L. FERNS, J. GOUDY, H. GALLOWAY, R. WATTS, M. HUGHSON, R. BRYDEN, K. R. BRIGHAM.
5th Row: W. ANDERSON, J. D. WINFIELD, A. AULAN, N. JULL, D. CAVANAGH, D. CHAPMAN, MR. L. J. RUBIN, MR. T. STORTON.
6th Row: R. APPLERAUM, D. SHAW, A. PINARD, A. L. WINFIELD, D. LIVINGSTONE, C. FARROW, H. REDLICH, R. CANTLE, I. G. SIMMONDS.
Back Row: E. ROLSTON, D. AZIZ, T. BARRY, D. KIDD, D. PEPALL, D. UROUHART, G. STEPHEN.
Inserts: DR. J. G. BRECKENRIDGE, A. LUDLAM, J. D. WRAY, J. L. KEARNS.

STAFF AND GRADUATING CLASS—ELECTRICAL ENGINEERING



Front Row:

W. B. BALL, J. C. ROSEY, J. D. WILSON, J. F. WINCHESTER, R. TAYLOR, M. J. OLDERSHAW, W. B. BUCHHOLZ, W. H. CUMBERLAND, J. A. MCINTYRE.

Second Row:

J. D. A. PALMER, N. J. MCMURTRIE, B. D. KENNEY, P. G. R. CAHN, J. R. S. HOPE, W. J. PURVIS, P. D. BALMER, PROF. R. J. BROWN.

Third Row:

R. A. GROSSKURTH, L. M. GORDON, E. HALISCHUCK, T. H. HARRIS, R. J. MCHARDY, G. W. STANGER, K. E. ROBINSON, C. J. MOYLL, J. S. SHAND.

Fourth Row:

H. A. DAVISON, R. H. SAFFREY, K. W. DOUGHTY, G. TUMINO, A. R. GOUGE, W. S. WOODS, D. C. LETCH, PROF. V. G. SMITH, G. K. LAMBERT, C. S. MORGAN, PROF. J. E. REID.

Fifth Row:

PROF. D. N. CASS BEGGS, R. T. CAVANAUGH, G. C. EASTWOOD, J. N. PICKERING, MR. E. F. BUCKLEY, R. D. WILMOT, D. S. MARTIN, MR. W. L. PHOENIX, MR. R. SCOTT.

Sixth Row:

MR. B. B. COXWORTH, W. B. HALL, N. J. SMITH, W. B. BARTLETT, G. D. SMITH, MR. R. G. ANTIES, G. G. ANDERSON, A. P. O'QUINN, MR. R. C. HENDERSON.

Back Row:

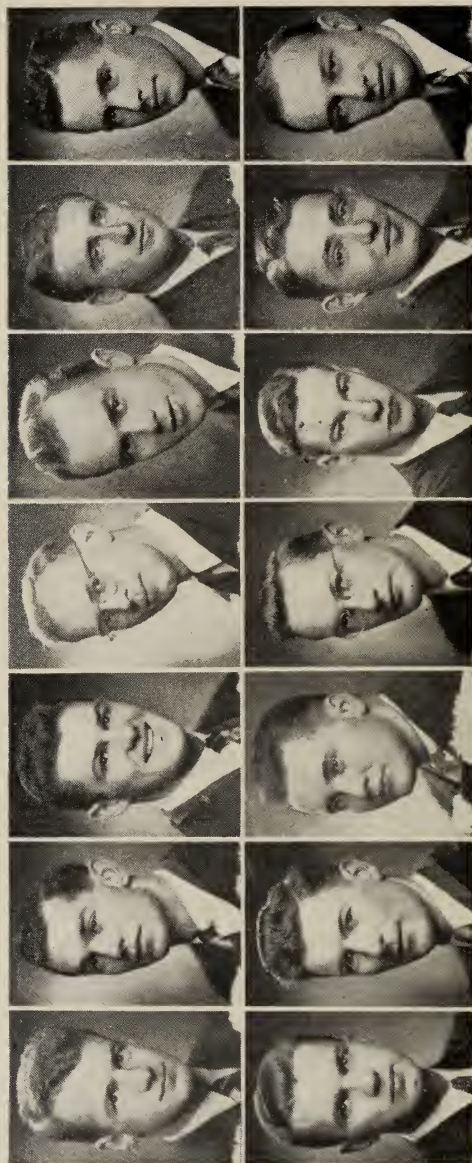
A. C. CALDERONE, E. W. PRINGLE, PROF. H. A. PRICE, E. M. WALKER, K. F. JONES.

FOURTH YEAR METALLURGISTS



Back Row: B. M. ROSENTHAL, E. ROSENTHAL, W. ROSTOKER, L. C. KURATA, L. C. BURKE.
Centre Row: J. N. HARSHAW, C. B. GILL, T. S. GAMBLE, MISS J. G. WARNOCK, K. J. CHISHOLM, F. J. S. FRANCIS, F. L. GOWAN.
Front Row: F. M. AIMONE, PROF. J. E. TOOMER, DR. L. M. PUDGEON, D. L. WATSON, PROF. J. A. NEWCOMBE, PROF. R. J. MONTGOMERY, H. ROSS.

PERMANENT EXECUTIVE



Top Row: W. G. TAMBLYN, President; R. F. MOORE, D. D. CURRIE, Vice-Presidents; P. F. AYKROYD, Secretary-Treasurer; R. E. UPPER, P. S. CROSS, P. LOCKHART, Councilors.
Bottom Row: H. AGNEW, A. C. MACDONALD, T. J. BATKE, C. S. MORGAN, C. B. GILL, R. B. TAYLOR, J. S. MARSHALL, Councilors.

PERMANENT EXECUTIVE 4T5

The function of the Permanent Executive is to keep the class in touch one with the other, to arrange re-unions and parties with other years and to carry on the business of the Class of 4T5, Faculty of Applied Science and Engineering until the last member breathes his last.

Your first memorandum of the fact that there is a permanent executive will come in the future when you are touched for a small contribution. The next will be a news letter telling where all the gang have gone and after that will be planned a re-union for the year in some suitable emporium.

We would like to remind you always to leave a forwarding address, to forward to the Secretary any news item which the others would appreciate (marriages and births, appointments and jail sentences, etc.), always stand ready to help a fellow class member if the executive informs you of some special service you can do.

We appreciate the honour of being chosen to represent our fellow graduates and will endeavour to faithfully fulfil our function as your executive. The good times we have had together at School will live on in our memories for years to come and we can anticipate our first re-union, when we will live them through again. Until that time, may the Class of 4T5 be richly blessed in all their undertakings as individuals and as a unit, and may the spirit of School always burn bright in our hearts.

President W. G. Tamblyn, 67 Roxboro Rd.

Vice-Presidents R. F. Moore

D. D. Currie

Secretary-Treasurer P. H. Aykroyd, 9 Garfield Ave.

FOURTH YEAR EXECUTIVE



Back Row: A. C. McDONALD, R. UPPER, C. GILL, L. ELLIOT, K. BRIGHAM, H. AGNEW, C. S. MORGAN, M. HEIFETZ.
Front Row: Miss S. B. MACDONALD, C. EASTWOOD, W. G. TAMBLYN, R. L. HICKS, W. J. BRANT.

4T5

It is difficult to believe that the Spring of 1945 has finally arrived. It is the culmination of four years of fairly intensive study, but more important than that, it is the beginning of a vital period in our lives, which, in most cases, will be entirely different from everything that has gone before. Attending high school and university has undoubtedly provided a certain amount of protection for many of us. We have generally known where we would be the following year and what we would be doing. Certainly this cannot be applied to our future now when the prospects anticipated change so rapidly. What activities we will be involved in can no longer be determined by ourselves but they might well be affected by the training and experience that we have obtained while attending the University.

By the extensive nature of the education that we have received in the last four years, we should be prepared to overcome many exigencies that will arise in the future which others in the same age group, will not be able to meet successfully, due to lack of training by their own volition or for any other reasons. Thus our education has placed many responsibilities upon us which we must readily accept at all times.

The most important factor which we should consider, however, is the fact that we are graduating at a time when we will have little opportunity to make any contribution to what is called the national effort. This might well have serious consequences regarding our post-war future. Perhaps by maintaining the same co-operative spirit that our class has always had, we might ease the burden of the work that might be cast upon us.

In the meantime, however, we can all look forward to a post-war Grad Ball for the class of 4T5 which we hope will be the biggest and greatest re-union in the history of the Royal York Hotel.

W. G. TAMBLYN.

4T6

As our Junior Year draws to a close, we men of 4T6 should take "time out" and make a recapitulation of the past year's activities. No one of us can look forward to the end of a year at School without mixed feelings of enjoyment and thoughts of the good times had working and playing together. Remember the good times always!

Ever since the inter-department teams in athletics were organized, there has been a good turnout for sports and this past year was no exception. Baseball, basketball, volleyball and water polo sweaters can be seen "walking around the campus" most any time, a mute testimony of those engaged in sports.

The class of 4T6 opened its social season with the popular joint 4T5, 4T6 Christmas Party. The party took the form of a dance and was held at Casa Loma on December 19th, with Ellis McLintock and his orchestra providing the best in dance music. During the intermission the King Cole Quartette of School Nite fame, entertained the crowd with several selections. Not to be outdone, the four professors gave their rendition of the Old Beer Bottle to everyone's enjoyment. Santa Claus managed to arrive on time to distribute his presents. The evening was made complete with ample refreshments.

Because of the pressure of work in March, it was decided to have the Junior Soph-Frosh dance in early February. It was held on February 9th, in the Banquet Hall of the Royal York Hotel, Frank Bogart supplying the music. A large crowd attended and an informal atmosphere prevailed as there were exchange dances, conga lines and spot dances with an armload of prizes. It was a thoroughly enjoyable evening.

At the time of writing, 3rd year executive is planning an informal plaid shirt and sweater party to be held the first week in March. The Kingsway Club on the banks of the Humber has been chosen with Ozzie Williams and his orchestra on the band stand and from all indications it should be a fairly good party. It will be a fitting finale to 4T6's social functions for the year.

In summing up the year, we find we have much on the right side of the ledger. It has been a good year. The executive wishes to thank the Class of 4T6 for their support in both year and all School functions. A hearty handclasp and good wishes go to the incoming executive and the best of luck to all members of 4T6.

DUNCAN A. WHITE, *President.*

4T7

Well, it sure felt swell to be Sophs instead of lowly Frosh when September rolled around this year. There are two hundred of our class remaining out of 300 enrolling in September, 1943, not as large as some previous classes, but a strong one.

4T7 boasts of some outstanding athletes showing up very well around the U. of T. campus. We had several men represented on Junior School and School III football teams. Junior School Lacrosse was packed with 4T7 men, as was the Junior School basketball team. Incidentally, this team was more than outstanding this year. Watch for some of our boys on the Varsity Blues next year. 4T7 also kept all of School's fine hockey teams well stocked with hot material. Of course, we have to mention baseball and water polo also, or the picture would not be complete.

To start the year off we put the Freshmen through their paces at Varsity Stadium and Friday afternoon, October 6th. The same night was the Freshmen Reception dance at Hart House, Jack Evans, Bert Niosi, and Hannigan's Mountaineers supplying the music.

Our next social event was the Soph-Frosh on Friday, November 10th, at the Royal York Hotel. Again we met the Freshmen but this time we took the beating as they occupied all the dark corners before we got there.

Due to an unusual Toronto snowstorm, we had to cancel our Christmas party scheduled for Tuesday, December 12. However, on Tuesday, January 9th, a handful of 4T7 men and 90 per cent of the three other years gathered at the Kingsway Club for our Christmas party. Everyone had a swell evening but next year let's make it a 4T7 party.

Other events that kept us jumping for dates were the School At-Home on January 18th, School Nite on December 1st, and the Junior Soph-Frosh on February 9th.

At the time of writing, the final exams are still at a fairly safe distance, but we hope to see you all next year either in the Infantry or back at S.P.S.

Until then, the very best of luck!

C. W. DANIEL,
President 4T7.

4T8

At the time of writing, final exams are but six weeks away, so this is as good a time perhaps as any to look back over the more pleasant activities of our freshman year.

The first few days were quite eventful. The proud green of Skule was upheld by 430 freshmen and the red of Meds and yellow of Vic were banished from the campus. Later the Sophs took over and we became a dirty and tired group of frosh. Nevertheless a grand crowd turned out that night for the Freshman Reception Dance and the class of 4T8 was on its way.

Late November saw the Soph-Frosh and December, School Nite. Christmas exams reminded us that University life is not all play but when the School At-Home came up in January, work was again forgotten. February saw the Junior Soph-Frosh and the class party at the Castle. Here a small but lively and happy cross-section of 4T8 completely enjoyed themselves.

Although not certain at this time, it is to be hoped that our social activities will end with a party on the last day of exams.

To the retiring executive, I would like to express my thanks for a job well done and to the new executive and the class of 4T8 as a whole the best of luck—now and in the years to come.

J. SERVICE.

THE GRAD BALL

For three long years we have been waiting for and anticipating that event which is the ultimate of all "School" functions—of course we are referring to the Grad Ball. This year the Class of 4T5 might well be proud of their efforts; the Ball was an outstanding success in spite of the numerous difficulties encountered.

The Ball was held Tuesday, March 6th, in the Royal York's Crystal Ballroom, with Mart Kenney and his Western Gentlemen supplying the stomp—and—slide rhythms.

White tie and tails were the order of the evening, with the ladies providing most beautiful company in pre-war creations, reminiscent of "pre-rationing" days.

Dinner was served at 8 in the Ballroom, and considering that the "point-system" is still much in evidence, the bill of fare was most interesting with "Essence of Tomatoes" and "Mignon of Lamb, Bercy Butter" (?) giving the menu a most appetizing appearance. Following dinner a brief intermission was observed, during which time the floor was cleared for the "Western Gentlemen", and many a budding engineer took advantage of the interim to fortify himself for the anticipated Torpsichorean activities.

Some of the outstanding features of the dinner were the Dean's farewell address to the graduating year, the presentation of the gold keys and leather medals, and a brief address by Professor Wright. Bill Tamblyn's handling of the M.C. duties was worthy of comment. At the head table sat members of the Engineering Society Executive and their guests, the members of the staff and their wives. From our observation, it seemed apparent that they enjoyed the event as much as their hosts.

Mingled with the joys of the evening was a note of sadness and regret that in a few short weeks we would all be dispersed, following individual paths into the future. However, let us hope that in the future the "Class of 4T5" may again gather and enjoy re-unions as memorable as this one was.



SCHOOL ATHLETICS

1945



ENGINEERING SOCIETY
THE UNIVERSITY OF TORONTO

ATHLETIC ASSOCIATION EXECUTIVE



Top Row: G. S. BOA, W. J. BRANT, A. N. CAMPBELL,
S. C. COOPER.

Bottom Row: D. M. GIBSON, K. C. HENDRICKS,
T. L. HENNESSY, J. McREYNOLDS.

ATHLETIC ASSOCIATION

As we go through the records and add up the wins and losses, it is not very hard to see why Schoolmen are still leading the way in campus athletic season.

A quick estimate shows that there were some 105 teams representing School in intramural competition embracing approximately 935 competitors.

On the championship side of the ledger, we find we have taken home 11 of a possible 17 team championships and were finalists in 4 of the others.

Although the T. A. Reed Trophy is supposed to represent intramural supremacy, there is going to be some doubt as to what it really does represent if it does not come our way this year.

At present, Trinity are leading School by approximately 1,500 points, boasting one big championship to their credit—Tennis—however, we hear from the “mighty” that an adjustment and reallocation of points is being made and if the cards fall right, we may take back the trophy.

The Athletic Association has attempted to provide the opportunity for every Schoolman to participate in some form of athletics and as evidenced by the number of teams and players participating, we would like to think that we have succeeded to some degree.

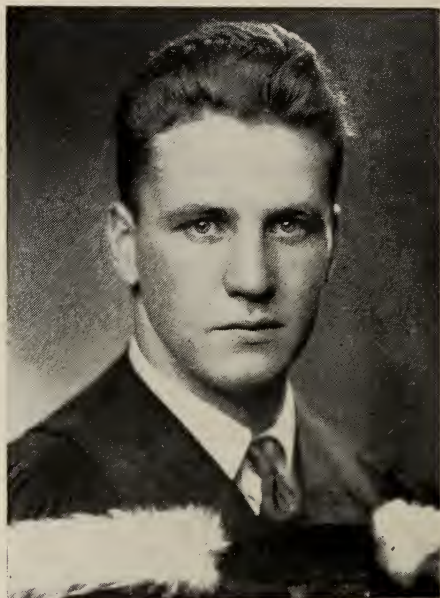
To the old executives, managers, coaches and players, we say thank you for your co-operation and wish you all the best of luck!

To the incoming executive and managers, we also wish the best of luck and say “Keep up the good work!”

D. GIBSON,

President.

BRONZE "S" AND PHENE MEMORIAL



This year, "School's" two outstanding athletic awards were won by Verne Booth. Verne succeeds Hal Seymour as possessor of these two awards simultaneously, making the third double winner in the history of School.

In the last four years he has starred for SPS in various sports including Rugby, Basketball, Track and Baseball. Besides this, he has played three years for the Varsity "Blues" Basketball team and represented "School" on the University Track Team, specializing in the hurdles and the broad jump.

Verne has also won his share of wartime "V's", which are given to athletes of outstanding ability, and who would have earned Varsity "T's", had intercollegiate competition been continued. Last year Verne was a triple winner, earning his letter in football, track and basketball. This year it appears as though he will again be a "three-letter-man", having so far won letters in football and track, with basketball yet to be decided.

Lawrence Park Collegiate claims the honour of having matriculated Verne to the "Red Schoolhouse" and in his high school days, he represented L.P.C.I. in three major sports—football, track and basketball.

To Verne, School extends congratulations and the most sincere wishes that his future as an engineer will be as successful as his athletic endeavours were at "School."



SENIOR FOOTBALL TEAM



Back Row: G. THATCHER (MGR.), J. BROMLEY, G. SHAW, J. R. CLARE, D. KEARY, H. MCKNIGHT, A. CAMPBELL, V. BOOTH, L. PANCER
(Coach)
Front Row: W. BOOTH, W. MOFFAT, R. UPPER, K. CRAIBBE, C. EVANS, W. SHARPE, R. MOORE.
Absent: P. CROSS, G. BOA, D. CURRIE, D. COLLINGS.

SENIOR SCHOOL RUGBY

The Senior School Rugby team had the distinction of being untied, undefeated, and of not having a single point scored against them in their regular scheduled games. This is the first time this feat has been accomplished by a team from the "Lil Red School House."

The first game of the season for the team was against the highly praised Meds team, who had been practising for five weeks or more while School had only received their sweaters a week before the game. Practice, however, was more than Meds needed and School trounced them 6-0 in their first meeting and 15-0 in their second tussle.

Dents' fate was even worse as they were overcome by School 20-0 and 23-0 and thus School became group champions.

In the semi-finals, Vic was overpowered by the steam-rolling Blue and Gold 19-0.

The final game was between School and U.C. This game had too many refs, who followed the rule book from commas to semicolons. School lost over 150 yards for penalties and had a touch-down called back for rough play. Due to this heart-breaking judgment against them, School dropped a 3-1 decision to U.C.

Through the season, Booth's end running and plunging had the spectators on the edge of their seats. The kicking by Ross Clare was superb as was his plunging.

The line was undentable with Cross and Moffat usually playing the full game. Big "Gus" Campbell, at snap, played a bang-up season and during the final game suffered a slight concussion and broke a bone in his nose.

"Stump" Evans at quarter was always good for at least five on a quarter sneak and he always knew what pay-off play to call.

To pick stars would be unfair as every player gave everything he had and even more at times.

Everyone on the team stood out, and except for a few tough decisions called against School, the outcome of the final game would have been reversed.

Congratulations, gang. Bring that Mulock Cup back next year!

GORD, THATCHER, }
BILL MITCHELL } *Managers.*

JUNIOR FOOTBALL TEAM



Back Row: W. SHARPE (Coach), D. FRANCIS, F. GODFREY, P. CARDINAL, B. NORD, T. HENNESSY, R. BROWN, C. W. DANIEL, R. SMITH,
R. BOYD, K. ROWNTREE (Mgt.).
Front Row: J. MCREYNOLDS, P. PHILLIPS, N. VOLPE, K. MCCLYMONT, H. BALLOU, D. GLEN.

JUNIOR SCHOOL RUGBY

The Junior School Rugby Team played the season with remarkable team spirit, every man displayed exceptional sportsmanship. The opposing teams of our group were from University College and Medicine. Winning two games from each of our opponents, we ended up in second place, U.C. first and Meds third.

The team started off the season with only four players returning from last year's team, Daniel, Smith, Glenn and Cameron, a fitting nucleus to build any team. The championship Riverdale Seniors were well represented by Norde, McReynolds, Phillips and Brown who with Volpe introduced the team and coach Walt Sharpe to the "T" formation which did so much to minimize the importance of the team's lack of weight. The players made up for their weight with speed and deception.

Godfrey, Sandler, Francis, Ballou, Marshall and Butko played outstanding football along the line. The four ends, Todd, McClymont, Hennessy, Boyd can wear cleats with the best of them. Their tackling was a treat to watch. Rumney and Cardinal were two out-of-town players. Rumney could play any position on the team, his broken field running was a treat to behold. Cardinal who hailed from Glebe Collegiate, Ottawa, was an excellent football player. He appeared on the campus rather late as he was just discharged from the R.C.A.F. He will be worth watching next year.

Volpe and McReynolds are to be congratulated for winning their University colours in their first year. We wish the team the best of luck in the endeavours in other lines.

The team was fortunate in having for its coach, Walt Sharpe who was at the same time playing Senior Rugby—Thanks, Walt.

A. K. ROWNTREE,
Manager.

SCHOOL III RUGBY

Although starting late in the season and with all the best football material gone to Sr. and Jr. School, the Thirds turned in a fair effort for their first year.

Under the guidance of Jackie MacLean, who handled coaching duties, the team managed to capture a fifty-fifty split on their season's games.

The season opened well for the team with wins against Victoria and Trinity Colleges. St. Mike's won the next game by a 2-1 score. This was easily the best game of the year and could have gone to either team.

Towards the end of the season injuries hit the team pretty hard. The loss of Collings and Marshall, who moved up to Sr. and Jr. School, respectively, also weakened the team. As a result two games were played with only one substitute and both were lost. However, the team managed to snatch another win from Trinity although at least four men were injured in this game.

Our backfield was hardest hit losing in turn Tredgett and Hendricks, our passing and kicking stars. Fordyce's running also helped, while Lou Butko filled in nicely at quarter and was a powerhouse on secondary defence.

The other backs, Boyle, McCombe, Phelan, Mosher and Newhouse were all in there fighting all the way.

Up on the line, Bob Booth at inside was a standout while Butko and Newhouse, who moved up to play middle, at times turned in fair efforts. While they were with us, Collings and Marshall were stars, while Mulholland, King, Ball, Campbell, Allan, Williamson, Hicks, Andison, Taylor were all out there with all they had.

"Doc" Dafoc, the most versatile man on the team, started out as end, switched to middle, then to snap; he was a deadly tackler.

Well, the boys had a lot of fun, School got some points and everyone is happy.

K. CRAIBBE,
Manager.

TRACK AND HARRIER

Again in 1944-45 it's S.P.S. track champions!

The team, comprised mostly of veterans of last year's meets and aided by a few good freshmen, captured both the Senior Inter-faculty track meet and the Senior Interfaculty Harrier.

Considering track first and breaking it down into its several sections we have:—

POLE VAULT—Tom Barry and Al Todd repeated last year's performances and again finished one, two, in this event.

HIGH JUMP—The two greatest jumpers ever to compete at the same time in any University in Canada, Bill Kerr and Art Jackes continued their rivalry with Bill edging out Art.

WEIGHTS—The return of Bob Lye to help out Orr and "Smitty" enabled School to come out on top in the weight events. Orr won the discus and placed second in the shot-put. Dick Watts placed in the javelin.

School's most versatile and proficient athlete, Verne Booth, picked up more points in the hurdles and broad jump.

Jim Moull led School's Harrier team to its championship and himself to the Brotherton cup. It was a fitting climax to his running career at School.

The real reason for the win was "Orange Jim" Bromley. Showing the spirit which we like to refer to as "School spirit," he entered the race with no conditioning and giving a great demonstration of just plain guts, brought us the championship.

Other members of the team were Bob Morrison and Frank Fordyce.

Editor's Note

Frank Fordyce himself was the leading member of the track team, and managed to capture the quarter, half, and mile in the excellent times of 51:8.0, 2:00.0, and 4:55.0.

He also managed to take the indoor mile from two Medsmen at their own Athletic Nite. Nice going, Frank; keep it up next year!

SPORTS EDITOR

GOLF TEAM

*Left to Right: R. W. J. WAECHTER, G. W. SIMONSON, I. R. STEE.
Absent: J. D. ORR.*

TENNIS

For the first time S.P.S. turned in a fair show in the tennis tournament.

Upholding the honour of School in the doubles, Bill Moffat and Sweeney Cross went to the 1/4 final, finally losing to Young and Dimoch by 6-1 and 6-4.

Although teamed with a U.C. man in the doubles, Bill Kerrigan managed to last to the 1/4 final and was forced to default through pneumonia. Tough luck, Bill, they tell me you had a good chance of taking it.

In the singles Moffat and Kerrigan were again the outstanding Schoolmen, Moffat finally losing to Bill Irving in the fourth round while Kerrigan lost to Wade of U.C. in the third round.

Nice try, fellows, and better luck next time!

GOLF

School has done it again!

Sustaining the loss of her foremost golfer in the person of Gordie Ball, S.P.S. still managed to turn out a championship golf team.

Losing out by only two strokes to Gibson of Dents, for individual honours, "Si" Simonson led the School squad to team victory with an 81. A little tough luck on the fifth hole robbed "Si," holder of the Stratford City Championship for two years now, of the title.

In the third place with an 83 was Tommy Stee, who placed second on S.P.S.'s team. Last summer Tommy was runner up for the championship at Siscoe Golf Club.

The other members of the team were Orr and Waechter, who both shot 87's. Waechter is holder of a captain's cup from the Rockway Club at Kitchener, while Orr is a boy who started his golfing as a caddy.

Nice going, fellows, and keep up the good work next year.

SENIOR SOCCER TEAM



Back Row: B. STOICHEFF, L. KAUFMAN, H. DENHAM, J. ROBINSON, R. MURPHY.
Front Row: R. EHRLICH, K. AHUJA, J. MAYNE.

SCHOOL 1st SOCCER TEAM

S.P.S. 1st Soccer team started out the year with high hopes of retaining the Arts Faculty Cup in School's possession. Unfortunately these were dashed when they went down to defeat just too many times in the early part of the season and then were unable to make the playoffs. It was only in the latter part of the year that they showed any resemblance to a championship team, when they downed Vic and tied a strong Meds team.

Up front, Mayne, Denham, Adams, Stoicheff and Robinson started slowly but developed a smooth combination, especially in the last three games. Ahujah, Kaufman and Murphy as half-backs, Dixon, and Erlich, as full-backs, with Allan in goal, capably rounded out the remainder of the team.

L. A. KAUFMAN,
Manager.

SECOND SOCCER TEAM



Left to Right
Back Row: N. EMMS, R. HIBBARD, S. SITVAK, W. PIDLUJNY, R. MORRISON, R. EHRLICH (Mgt.).
Front Row: R. C. SIMS, H. B. KOHL, S. SANDLER, M. STEIN, W. MACKE.

SCHOOL 2nd SOCCER TEAM

This fall School did not have much luck in any of the events, and soccer was no exception. The second team was placed in Group III with Knox and Wycliffe.

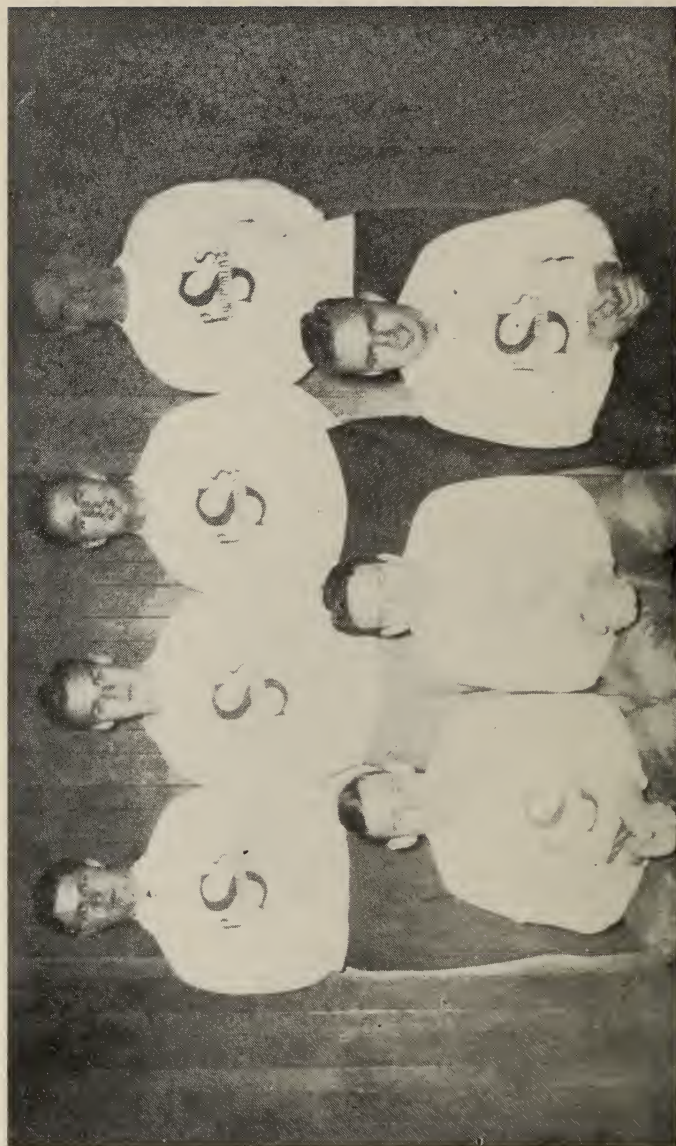
Present on the team were only four holdovers from last year, but a lot of good material showed up in the practices. Included was the best goal keeper in the whole Soccer League, namely, Emms. The main trouble in keeping a good team on the field was, that the minute any player showed good form, he was snapped up by the first team, for example Murphy and Stoicheff.

The team did not have such a bad record—they tied the first game with Wycliffe, lost the next one to Knox, tied again with Wycliffe and won the final one against Knox. The inability of Wycliffe to beat Knox ruined their play-off chances.

More will be heard next year from Emms, Hibbard, Macke, Butterworth, Pidlubny and Kohl. These players should make a good addition to the first team and combined with the players that remain from this year's first team should give School a better chance next year.

R. P. EHRLICH,
Manager.

SENIOR SWIMMING TEAM



*Back Row: J. MARTIN, J. BOA, P. LOCKHART, W. MOFFAT.
Front Row: A. PATTERSON, G. BOA, D. LEITCH.*

SENIOR SCHOOL SWIMMING TEAM

Senior School, as usual, had a great record this year. They won every meet quite handily and entered the finals against Jr. School without having suffered a defeat. They were quite handicapped by the loss of Norm Lea in the final meet and the new line-up was not quite powerful enough to beat the Juniors, who swam a great meet to win by a nose.

The defeat, though tough to take, is not too much a loss since the Championship stays at School.

Let's see you Juniors keep it where it belongs!

LOCKHART—Pam, a "V" holder for swimming, swam consistently well all year and is one of the University's best freestylers. He was beaten only once or twice in four years at School.

PATTERSON—When it became evident that Sr. School was lacking backstrokers, Al, a swell freestyler, took over the job and turned in some great races in this event.

MOFFAT—Bill was one of School's standbys and swam in all events at some time or other during the season. He put everything into it all the time.

AYKROYD—Pete, a great freestyler, was conscripted to swim breast-stroke and was a threat to all his opponents.

LEA—Norm, after winning the breaststroke, his specialty, in the first few meets, was forced to go to the sidelines due to sinus trouble. His absence was a great loss in the finals with Jr. School.

BOA—Gil was brought up from the III's when it was discovered that Norm was unable to swim. He turned in some fine efforts alongside Pete.

MARTIN—Jim was another swimmer who had a hand in all events at one time or another. He was good every time he entered the pool.

LEITCH—Don swam beside Al in the backstroke and also in the medley relay. He made the opposition press at all times and got his share of points.

JIM BOA,
Manager.

Ed. Note—Jim Boa, a good swimmer in his own right, managed to fill in wherever needed and contributed much to the team.

JUNIOR SWIMMING TEAM



Left to Right:
Back Row: P. TURNBULL, M. ROTENBERG, T. GRANFIELD.
Front Row: N. BOWDEN, B. FLANAGAN, D. FLEET.

JUNIOR SCHOOL SWIMMING TEAM

SPLASH !

CRASH !

And so it went whenever the classy '44-'45 version of Junior School aqua men took to the pool. Splash went the boys and crash went the opponent's hopes of victory.

Handily the eager gang of youngsters tore into their arch rivals Jr. Meds to the tune of 30-3; and Victoria to win their group, hands down.

The finals saw them pitted against the "Grand old men of swimming," namely, Sr. School, and only when starry Pete Turnbull nosed out Pam Lockhart, Sr. School's wonder boy in the 50 yard free-style was the issue decided and the Interfaculty Championship crown deposited on the proud head of Jr. School.

Composed of mostly freshmen swimming their first year the big time roster ran as follows:

Held over from last year were:—

BILL FLANAGAN—A really fine all-round man handled freestyle and back stroke chores equally well.

MARK ROTENBERG—A breaststroke man of no mean ability and very dependable.

The Freshmen were:

REG OPIE—A lad of Canadian championship ability and the best to hit School since J. Northwood. However, an unfortunate accident rendered him unable to participate in any more than the first two meets.

NORRIS BOWDEN—This man bears watching as Varsity calibre.

Undefeated all year in seven starts in his specialty, breaststroke.

PETE TURNBULL—The team's wonder boy and big point-getter, being undefeated in the freestyle department.

BOB TRESS—A three-star man and equally proficient in the three strokes. Bob was a real help and always came through with a win.

TED GRANFIELD—Equally handy at the back stroke as well as the freestyle, Ted showed real sportsmanship all year and turned in one of the best performances of any.

DON FLEET—A real whiz at anchor man on the relays and more than once pulled the iron out of the fire with a stellar effort.

R. N. HADLEY—Rounding out the team this lad turned in some swell feats on the relay.

AL PATTERSON, *Manager.*

THIRD SWIMMING TEAM



Back Row: P. QUENTIN, J. PALFRAMAN, J. BOA, G. BOA, C. EASTWOOD.
Front Row: B. BOOTH, G. PATTERSON, H. KOHL.

III SWIMMING

During the Fall of '44, the III Swimming succeeded in maintaining the custom of the past by moving into the semi-finals round against their stronger brothers and again coming out second best. Their record through the season stands out as impressively as any and it is not difficult to imagine them taking the championship in a meet with any of the other faculty or college teams. They decisively defeated Dents A, Junior Meds and Knox, the other members of their group and then went on to hang up a score of 28.5 against Forestry in the quarter-finals.

The team had the misfortune of meeting Junior School in the semi-finals, who proved themselves the pick of the swimmers and went on to take the championship. The success of the team was in most part due to the whole-hearted support of its members as well as their swimming ability.

The team was soundly built on consistent swimmers like Jim Boa, Gil Boa and Clive Eastwood and gained its strength in the newcomers. Clive Eastwood and Jim Boa took care of the back-stroke chores and were usually racing each other for first place.

Gil Boa had full charge of the breast-stroke department contributing greatly to the total points at all times. Harry Kohl, one of our free-style threats, was never called upon to go all out in the relays because of the other men's commanding leads. Jack Palframan, one of our newcomers showed everyone he should have been swimming for School long before now. Along with Pete Quentin and Gord Paterson, he kept the free-style honours sewed up.

The only thing left for Bus Booth was to fill the place of the second breast-stroker and notify the men of the meets.

I wish to thank the members of the team for their splendid support in making the III's a top-notch team and hope the teams following will continue as strong.

W. L. BOOTH,
Manager.

SENIOR HOCKEY TEAM



*Back Row, Left to Right: J. S. SHAND, K. H. ANDERSON, S. L. KENT (Manager), E. M. WALKER, D. F. DAVIS.
Front Row—Left to Right: R. K. MORRISH, J. C. BOA, J. R. CLARE, J. J. McCOMBE, R. E. UPPER, L. A. KAUFMAN.
Absent: E. MAJOR, J. McLEAN (Coach).*

SENIOR HOCKEY—JENNINGS CUP CHAMPIONS 1945

After a one year absence, the Jennings Cup had returned to the little red schoolhouse. This year's Senior Team was one of the School's strongest; of the nine games played, seven were wins and one was a tie.

The season began rather inconspicuously with the Seniors being edged out 3 - 2 by U.C. I. The Senior then beat Meds I, 2 - 1, and in their second game with U.C. I School came out on top, 3 - 2. The Seniors then knocked off a 4 - 0 victory over Meds I and played a 2-all tie with U.C. I. The winless Meds I defaulted their last game with the Seniors to end the schedule.

In the first round of the play-offs, Senior School drubbed Forestry 8 - 1 and then in the semi-finals defeated Vic I in a hard-fought game 5 - 3. The Grad Ball on the previous night slowed parts of the School machine down to a walk. However, Ken Andison turned in a 3-goal effort and was the best man on the ice.

Senior School then entered the Jennings Cup Finals against U.C. I. School won the first game 3 - 1 with Murray Walker, Lloyd Kaufman and Jim Boa doing the scoring. The whole team played sound hockey but muffed several good scoring chances. In the second and last game of the Finals, the Seniors swamped U.C. 7 - 2. Every man on the club played standout hockey, leaving Bob McCombe very little to do in goal. The first five goals were scored by Jim Boa, Ken Andison, Lloyd Kaufman, Ross Clare and Murray Walker. Murray and Lloyd each scored again to end the game and the season.

Jack Shand, captain of the Blues, deserves special mention for the capable way he alternated between right wing and defence while scoring consistently. Jim Boa, Murray Walker and Ken Andison, all Blues, played standout hockey all season with Murray leading the goal scorers. The defence trio of Ross Clare, Don Davis and Eric Major played good hockey all year. Lloyd Kaufman, Bob Morrish and Russ Upper, the other forwards, played a good brand of hockey with Lloyd scoring 3 goals in the Finals while Bob and Russ scored consistently during the season. Bob McCombe played a good steady game in the nets all year and was spectacular when necessary.

Special thanks goes to Jack McLean who coached the Seniors and did the masterminding from the bench during a most successful season.

SID KENT, *Manager.*

JUNIOR HOCKEY TEAM



Left to Right:
Back Row: G. MUDDMAN, J. PHELAN, N. VOLPE, W. MITCHELL (Mgt.).
Front Row: W. STEPKOWSKY, J. ROBINSON, R. MOSHER.

JUNIOR SCHOOL HOCKEY

During the schedule St. Mike's beat Junior School, 6 - 3, and Vic won twice, 6 - 4 and 7 - 4. The score was no indication of the play as quite often the team got some bad breaks. The 7 - 4 game was played with the team only having 6 men, and at that they gave Vic a run for their money.

ROBINSON—goalkeeper—"Robbie" did a very good job between the posts and improved every time out. He had some go by him that were really heartbreakers.

VOLPE—defence—Nick played good hockey all through the season and can give his opponents a stiff body check when the pressure is on.

PARKER—defence—Dan teamed up with Nick and played rugged hockey until the Christmas results came out.

COPP—defence—Dave is a hard and fast skater, combining good stick-handling with a hard shot. Very often these shots paid off—in goals.

MUDDIMAN—defence—Bob is a boy who can really stick-handle. He is very strong on his skates and seldom takes the worst of it. Bob was one of the team's most consistent scorers.

MOSHER—centre—"Mac" centred the first line. He is a clever play-maker and set up his wings for many scoring chances. He also gathered his share of goals.

HOUSTON—left wing—Bill, the fastest and the biggest man on the team, is a two-way player with plenty of spirit. He accounted for many of the assists as well as giving the opposing goalies lots of trouble with his hard shots.

PHELAN—right wing—Jack is the man on Mosher's line who is very adept at covering his opposing wing. He is a close and persistent checker.

STEPKOWSKY—centre—"Step" centred the remaining line and did a good job of it. He is a good play-maker and one player who never quite trying.

TRANMER—left wing—Bill was one of the team's most consistent scorers. He is a fast and tireless skater who will not give up till the final bell.

FRYER—right wing—Bob was the unluckiest man on the team. The puck just wouldn't go in the net for him. At that, he contributed his share of goals.

BILL MITCHELL, *Manager.*

THIRD HOCKEY TEAM



Left to Right:
 Back Row: T. Phelan, R. Davidson, K. Anderson, K. Young, K. Sutton, T. Harris.
 Front Row: L. Walker, D. Venton, R. Moore, J. Bradford, G. Shaw.
 Absent: M. Baker.

SCHOOL III HOCKEY

This year School III enjoyed their most successful season in years, reaching the semi-finals before being eliminated. The Thirds were grouped with Dents A, Trinity A and U.C. II and this group provided some of the hardest fought games in the Intramural League.

In league play, the Thirds defeated U.C. II handily in both games by scores of 9 - 0 and 6 - 2, split with Trinity, losing the first 5 - 3 and winning the second, 3 - 2, and also split with Dents, winning the first, 3 - 2 but losing the second, 4 - 2. Dents and the Thirds finished in a tie for the group-title and in the play-off, a 3-goal outburst at the beginning of the second period, started the team on the road to a 5 - 0 win and a spot in the play-offs.

In the play-offs, Meds II were the first opponents and they succumbed 3 - 2 in a very close game featured by a quick 3-goal scoring spree by School at the start of the game. In the semi-finals, the Thirds were defeated, 8 - 1 by U.C. I but lost no prestige doing so as every man on the team put up a game fight.

The players were:—

Goal—The goal-keeping was well looked after by “Chunky” Moore, who played sensationally all year, especially in the play-offs.

Defence—On defence, the backbone was George Shaw who played most of every game and showed to most advantage when the chips were down. He was ably assisted by Don Venton and “Huff” Harris, his defence mates.

Forwards—Ken Young, Ted Sutton and Tom Phelan formed a very effective first line for the team, and potted most of the goals. Ken Young was our high goal scorer for the year, with second place going to Tom Phelan, the hardest fighter on the team. Ted Sutton was the fastest man on the team and back-checker de-luxe. He was the man who checked Dents’ ace, Bob Murray, to a standstill in the group play-off.

The second line also got their share of the goals and was centred by Mac Baker who also took a turn on defence. The wings were Jim Bradford and L. Walker, both of whom turned in very creditable performance every time out. As substitute, we had Ross Davidson who didn’t get much chance to show his stuff, but played well while he was on the ice.

K. ANDISON,
Manager.

SENIOR LACROSSE TEAM



*Back Row: B. ANDISON, J. TURNER, K. CRAIBBE, R. SHEPPARD, P. CROSS, H. BOYLE, B. STEELE.
Front Row: L. VENCHIARUTTI, D. KEARY, B. COOK.*

SENIOR LACROSSE

The Dafoe Cup returned to School when the Seniors knocked off the favoured Meds, last year's champions in a thrilling 2 out of 3 final. Under the many discouraging predictions, this effort took lots of the old fight—and here are the boys who had it:

BILL ANDERSON—goal—Bill got the only shut-out in the league and was considered by all as the goalie of the year.

HUGH BOYLE—forward—Hugh is one of the veterans and a stand-out player.

AL COOKE—forward—Always in there fighting—watch for him on the Seniors of '45.

KEN CRAIBBE—forward—Ken left lots of battered, twisted bodies lying on the floor and dinged a nice share of goals also.

PHIL CROSS—defense—The committee had a prejudice against Sweeney because every member had been hung up at least once by him—one of the best.

BOB SHEPPARD—defense—Bob can be counted on for hard-checking and dependable play—one reason School will take the Cup in '45.

BILL STEELE—forward—Selected as University's best goal-tender in '43, Bill took to playing forward this year and turned out to be the highest scorer in the league.

JIM TURNER—forward—The poppa of 'em all, Jim set up everyone else for goals and got more than plenty for himself. He's been starring on School lacrosse teams for five years.

LEO VENCHIARUTTI—forward—Leo can twirl the gut with the best. He's a sure thing for a good team next year.

DOUG KEARY—forward and technical consultant—Talked louder, longer and faster than all other managers, referees and players.

Thank you, boys. Best of luck for '45!

DOUG KEARY,
Manager.

JUNIOR LACROSSE TEAM



Left to Right:
Back Row: P. CROSS (Mgt.), E. PARKER, D. GLENN, C. W. DANIEL, K. DOYLE.
Front Row: L. FARQUHAR, B. WARREN, J. SECORD, E. TEGHTSOONIAN, R. TREDGETT.

JUNIOR LACROSSE

Well, they tried hard! They were right in there all the way! The team was placed in a very even group with U.C. and Jr. Meds. All teams ended in a three-way tie at the end of the schedule—School got a bye into the group finals where they dropped a close one to Jr. Meds.

The team was very evenly balanced throughout. In goal Second turned in many a good performance. On defence we had two "creamers," Daniel and Glenn. These two boys made it rough for many an opposing player and if Daniel will keep his eyes open next year when he hits them he will be an A1 "creamer." At centre was Doyle, who went both ways every game. At rover there was Farquhar, who played well all year and nicked many a goal. Playing in the pay-off spot, but not paying off any too often, was Tredgett who sure likes to handle a stick in a razzle-dazzle way. Backing these boys up we had Parker, a nice stick-handler with a hard shot. Teghtsoonian, a shifty little fellow with lots of fight, and little Warren, the youngster of the team, who will develop into a fine lacrosse player when he adds a few more pounds.

The majority of these boys will be playing Senior next year and with a few left-overs from this year's Senior team, they should help to make a very strong and possibly another Dafoe Cup team next year. Let's keep it at School, boys!

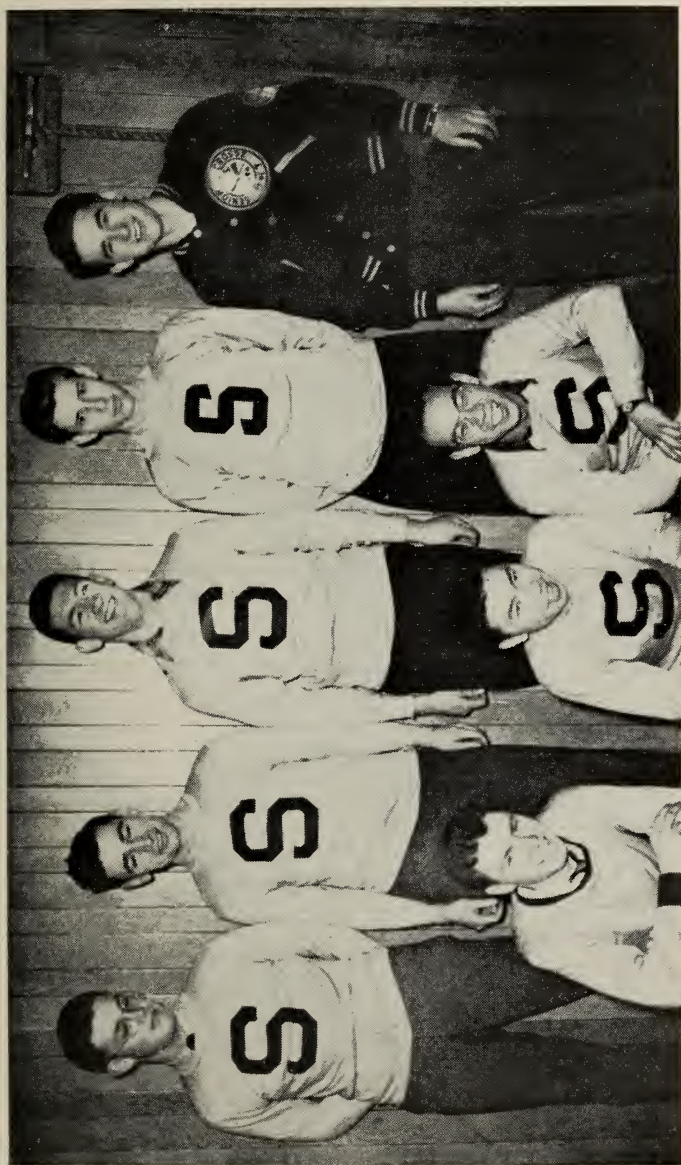
P. S. CROSS,
Manager.

THIRD LACROSSE TEAM



Left to Right:
Back Row: K. CRAIBBE (Mgt.), B. MITCHELL, D. ANDERSON, J. BROMLEY, W. SHARPE, B. BOOTH.
Front Row: J. PICKARD, S. COOPER, G. BROWN.

FOURTH LACROSSE TEAM



Left to Right:
Back Row: H. REIMER, R. SIMS, T. HENNESSY, H. DENHAM, H. BOYLE (Mgt.).
Front Row: R. BUTTERWORTH, L. MARK, R. LEA.
Absent: R. LOVE, F. FORDYCE, J. NEWHOUSE.

SENIOR VOLLEYBALL TEAM



Left to Right: A. CAMPBELL, J. BRANT, J. WINCHESTER, S. COOPER, J. BOA, D. GIBSON,

SENIOR SCHOOL VOLLEYBALL

This year the Senior team went out with the idea of copying last year's example. There were six of last year's still around and consequently it looked like a sure thing that the Seniors could walk away with the U. of T. crown again.

Throughout the season, all expectations were met—but in the playoffs with U.C. (there's always a *but*) something went wrong. It happened just after the School cannon was stolen. U.C. won the cup after going 5 games. It was by far the best game of the season. U.C. won the first two games, 15-9 and 19-17. Then School won the next two, 17-15 and 15-13. In the last game School was leading 11-5, only to blow up and be beaten, 15-12.

Nevertheless, it was rumoured that School had the better form and this can be reasoned out by looking over the following team members:

Warren "Jeff" Brant, Don Gibson and Pete Gibbs—all of senior company last year—formed the nucleus of the team and spiked according to old form. This is their last year in U. of T. Brit. Danard, John Winchester, Gus Campbell were all new to Senior School but showed plenty of class and held their positions. It was not realized that, due to Gus Campbell's height, he was a natural at set-ups until the last game—*too late*.

Jim Boa, Dave Wright and Sid Cooper were also all repeats from last year's Senior team. These three were responsible for many set-ups and without them the tall "Joes" would be sunk, as we found out when all the "spikes" were tried on the floor at one time.

Nice try, fellows!

KEN JONES.

JUNIOR VOLLEYBALL TEAM



Left to Right
Back Row: R. HIBBARD, J. SWAN, N. VOLPE, K. HENDRICK.
Front Row: D. MACDONALD, L. FARQUHAR, R. BUTTERWORTH.

JUNIOR SCHOOL VOLLEYBALL

Starting the season with only two holdovers from last year, and losing one of these through injury, the Juniors had to start from scratch with nearly all new men.

So far, in league play, they have won six straight matches and dropped only one game in the process and that to Jr. U.C., who finished second to School in the group.

In the play-off rounds just started, they received a bye into the second round, as one of the seeded teams. Packing good volleyball sense and lots of high school volleyball experience, the first year boys and new second year men have become a smoothly-functioning unit and represent the strongest Junior team that School has put on the floor for some years. They should go far in the play-offs and stand a good chance of giving their big brothers on Senior School a tidy tussle for the silverware.

Keith Hendrick, left from last year, along with Jack Swan, Art Jackes and Bob Campbell, have all turned in swell efforts on the spiking line, but wouldn't have gone far without such set-up men as Nick Campbell, Don McDonald, Lorne Farquhar, Butterworth, Bahry, Hibbard and Nick Volpe. With a break, these boys might easily bring home the bacon.

A. N. CAMPBELL,
Manager.

SENIOR BASEBALL TEAM



Back Row: G. SHAW, K. ANDISON, J. FARLOW, H. STRICKER, J. BRANT.
Front Row: R. APPLEBAUM, C. EVANS, J. BOA, S. COOPER, J. BROMLEY.

SENIOR SCHOOL BASEBALL

After numerous attempts, School finally won a baseball championship, even if it was by a basketball score. Some of the boys have been trying hard for four years.

After losing the first game of the season to U.C., they went on to win the group, winning the next five games. They then won three play-off games and entered the finals against U.C. Each team won a game and then School emerged victor in a "wild and wooly" game, 15-12.

Ken Andison, best catcher in the league, had a great year getting at least two fingers knocked out per game. For a change this year, Stricker the pitcher, sometimes even threw two strikes in a row.

Jack Farlow, Jeff Brant, Syd Cooper (who got a V) and Charley Evans made up the infield. We never did get Evans out in time for a game.

Jim Bromley, George Shaw, Rube Applebaum and Jimmy Boa who joined the team after the first couple of games made up the outfield.

At the start of the season, it looked like we would need some more players because some of the fellas were getting colds from breezes set up by striking out. However, after once getting started, the team really began to hit.

HERB. STRIKER,
Manager.

JUNIOR BASEBALL TEAM



Left to Right:
Back Row: B. MORRISON, D. MACDONALD, N. VOLPE, T. HENNESSY, B. HAMM, S. COOPER (Mgr.).
Front Row: J. CONNELL, L. FARQUHAR, P. PHILLIPS, R. BUTTERWORTH, L. BUTKO.
Absent: J. McREYNOLDS.

JUNIOR SCHOOL BASEBALL

This year's junior ball team showed a hard-hittin', hard riding (each other) ball team. Built around a raft of guys who were full of chatter, their ball games were full of fire, brimstone and the Abbot and Costello query, "who's on first?"

"Mac" MacDonald threw good ball to catcher Jack Connell. Going around the infield we have Nick Volpe (the boy wonder), Lorne (Silent) Farquhar, Bert Hamm, "Spike" Hennessy and Jack McReynolds. That adds up to five instead of four but that's quite in order since sometimes we thought the boys did not add up at all.

In the berries we had Roy Butterworth, Morrison, and young Phillips.

The kids gave their all while doing and dying for dear old Skule and despite the fact they were referred to as the Green's Ladieswear Redsox, they outlived that slander to play a good brand of ball. We're proud of you, kids.

P.S.—The team was haunted by a character named Butko all season who claimed he once pitched for the Lackawanna Blue Sox.

S. COOPER,
Manager.

III BASEBALL

This year the III Baseball team, a well-balanced club, had a very good season, winning its group handily, and almost beating Senior School in the semi-finals. Only a couple of bad bounces from the rafters robbed the team of its chance to play U.C. in the finals.

Sparked by the sterling twirling of Roy Tredgett, the big bats of the same Tredgett and Phil "Basker" Boivin, and excellent fielding all around, the team had no trouble in trouncing U.C. II, St. Mike's, and Trinity in the regular schedule. III Chemicals and IV Mechanicals were easily pushed aside in the first two play-off games, but Herb Stricker's pitching for the Seniors was a little too tough in the semi-finals, the final score being 7 - 4.

Bus Booth, the lead-off man at bat, covered the tough third base position without an error.

Harry Denham made a good battery mate for Roy Tredgett. His accurate throws to Gilmour Boa at second caught several runners trying to steal that base.

Tommy Phelan, a power-hitter, fielded flawlessly at short stop. Big Gus Campbell covered a lot of territory around first base, and his mighty bat struck awe into all opposing pitching.

Wally Finley, Phil Boivin and Clarence Killoran were deadly on flyballs to the outfield. Wally showed his mettle as a hitter by getting two safeties off Stricker's much-vaunted hurling. Clare hit consistently and always played heads-up ball.

All the boys, except Clare who graduates this year, will be gunning for the championship, with better success next year, let us hope!

GILMOUR BOA,
Manager.

SENIOR WATERPOLO

Senior School this year came up with one of the best teams in its history only to be denied the championship by one game, their only loss of the season.

Playing in group I, School went through an undefeated schedule composed of a much-improved U.C. team and last year's Champions, Senior Meds. Central Y.M.C.A. were invited up to Hart House for two games, both of which were the best of the season. School played heads-up ball and came through with its winning streak still intact.

After defeating each of the teams in their group three times, Senior School entered the quarter finals against Junior Meds and again emerged victors.

In the semi-finals, School came up against St. Mike's A team, coached by Frank DeMarco, a former SPS waterpolo star. Frank's team played a very close checking game and waited for the "breaks", managing to "cash-in" on three long shots which eluded "Gus" Campbell in the first half. School continued to carry the game to St. Mike's, but it was just one of those days, School did everything but score. Harry Kohl had ten shots on goal in the second half but they just wouldn't go in, and so School's bid for the championship was denied. St. Mike's now enter the finals against Senior Meds who got in the play-offs as runner-up in group I. Now for the personnel of the team:

HARRY KOHL—A "V" winner from Junior School's great team of last year, left wing. One of the team's most accurate shots and a good playmaker. Doesn't believe in condition.

JIM MARTIN—Another "V" winner from the Juniors. Has a fast hard shot, and is the best swimmer on the team. Swam centre and always got the ball, except against Central "Y".

GIL BOA—*Rover*: Gil took Pete Quentin's place, moving up from guard when Pete got sick. Gil has a hard shot and scored on many long shots. Condition is his only weakness.

BILL MOFFAT—*Ring Wing*: Worked hard and managed to get a goal every other game or so. Managed the team but didn't buy the sweaters. Must admit that the years can't be denied!

JIM BOA—*Wing*: Jim played too much hockey, and so we lost his services in the final game. Jim possesses the hardest back-hand shot on the team, a real threat.

SENIOR WATERPOLO TEAM



Front Row: D. MULHOLLAND, W. MOFFAT (Mgt.), A. CAMPBELL, H. KOHL, G. BOA.
Back Row: R. HICKS, D. CORNELL, D. LEITCH, J. MARTIN.
Absent: W. SHARPE, J. BOA.

DON MULHOLLAND—*Guard*: Don is one of the strongest swimmers on the club, and can even move up to forward and score the odd goal. Played last year with Junior School.

DON LEITCH—*Guard*: Non has played a lot of good waterpolo for School, and deserved to be on a championship team. Too bad, Don!

BOB HICKS—*Guard*: Like Don Leitch, he has played a lot of ball for School. Held the opposing forwards in check most of the season.

WALT SHARPE—*Guard*: Walt joined the team for the last two league games and the play-offs. Walt is one of the best swimmers in Varsity, and plays a rugged game of polo.

"GUS" CAMPBELL—*Goal*: Gus is one of the best goalies in the game—unbeatable on close-in shots—but some of those long ones give Gus trouble. He will be back next year so School stands a good chance to win.

SCORES

SPS.....	6	U.C.....	2
SPS.....	1	Senior Meds...	0
SPS.....	2	Senior Meds...	0
SPS.....	4	U.C.....	2
SPS.....	3	U.C.....	2
SPS.....	6	Central "Y"...	5
SPS.....	12	Central "Y"...	4
SPS.....	5	Senior Meds...	3
SPS.....	7	Junior Meds...	0 (quarter-finals)
SPS.....	0	S.M.C.....	3 (semi-finals)
<hr/>		<hr/>	
46		21	

P.S.—Senior Meds defeated S.M.C. 6 - 3, 3 - 2 in the finals.

JUNIOR WATERPOLO TEAM



Left to Right:
Back Row: K. HENDRICK, T. HENNESSY, G. BOA (Mgt.), H. BALLOU,
Front Row: H. BAILEY, B. FLANAGAN, D. FLEET, H. ALSBERG, R. BROWN.
Absent: B. CAMPBELL, B. TRESS, M. ROTENBERG, P. TYMOCHKO.

JUNIOR WATERPOLO

This year's junior team, starting with a group of men, not one of whom had played regularly for a high-ranking team before, developed into one of the best teams in the interfaculty league. In their own group, only the powerful St. Mike's team gave them any trouble. These two teams were evenly matched, each winning and losing one game of their two meetings, leaving Victoria and Junior Meds, the other members of the league, far behind.

All men on the team were fast swimmers, giving them a great advantage over their slower rivals.

Keith Hendrick, an all-round athlete, was one of the best forwards on the team, a deadly shot from any position and a good team player. Hank Ballou was another outstanding player and high scorer. Bob Campbell, at centre, usually managed to get the ball from the face-off, and scored some important goals.

Don Fleet, alternate forward, was the hardest working man on the club, and was equal to the best before the season ended. He should earn a "V" this year. Hill Bailey and Bob Tress alternated at rover and were effective both offensively and defensively. Bill Flanagan, Ron Brown, Peter Tymochko and Henry Alsberg checked very closely on defence seldom allowing the opponents to get a good shot away. Brown particularly showed possibilities for future stardom.

In goal, Spike Hennessy, who never played before, made many brilliant stops.

After defeating St. Mike's B handily in the quarter-finals, the team met the powerful Senior Meds Team in the semi-finals. They got away to a bad start, being down 4 - 1 at half time. They put on the pressure in the final half, but were not quite able to overtake Meds, the final score being 6 - 5.

Nice try, fellows; keep it up next year!

GILMOUR BOA,
Manager.

GYMNASTICS

On February 10th, S.P.S. recaptured both the Interfaculty Gymnastics Team Championship, and the Individual Championship from P.H.E.

Although P.H.E. held an advantage in that they had been doing gymnastics daily, the Schoolmen turned out regularly for the 3 hours a week allotted to them.

A team of three Schoolmen competed with P.H.E. in the formal meet on February 10th. The men comprising this team were:—
GLEN CURTIS—A newcomer to S.P.S. but an old hand at gymnastics from his collegiate days.

TOM BARRY—A fourth year student, who did remarkably well for his first time in competitive gymnastics.

AMOS PUDSEY—A third year student, who was the only man to come back from last year's team.

A second meet was held a week later for men who had just started gymnastics this year. S.P.S. also won this meet, the individual honours going to Jack Dalrymple.

A large portion of credit must be given to Mr. Charles Zwyard, for his untiring effort and patience in teaching gymnastics to the S.P.S. Gym Team.

Next year with this nucleus of 6 or 7 men, S.P.S. should have an excellent chance of keeping the gymnastics title.

AMOS PUDSEY.

SENIOR BASKETBALL

Senior School started off the season with a bang running up five consecutive wins before dropping a 1-point decision to U.C. in the last scheduled game of the season. Having won their group, they then entered the play-downs. After winning two play-off games, they came up against a short-handed but fighting Dents team who took the game with another slim 1-point margin and sent School into discard.

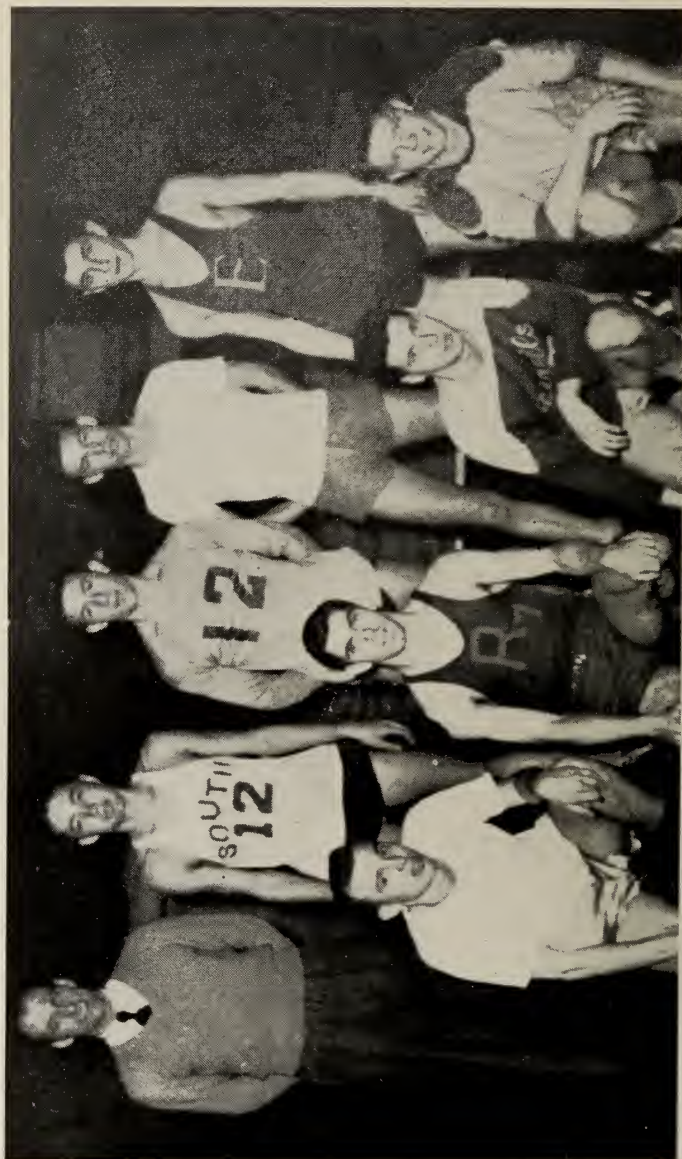
Although containing several experienced veterans in this line-up, the necessary scoring punch to take down the championship seemed to be missing.

At centre was big Jim "Pauncho" Turner, flanked by Bill Hall and Jeff Brant. At guards were Verne Booth and Pete Gibbs. Then we have Ross Clare, Ernie Rolston and Rube Applebaum.

As most of this team graduates this year, it might be well to say that during their four years, all of these fellows have done a good job in establishing School's reputation for having good basketball teams.

DON GIBSON

JUNIOR BASKETBALL TEAM



Left to Right
Back Row: J. BRANT (Mgt.), A. ANDERSON, T. HENNESSY, J. SWAN, R. TREDGETT.
Front Row: J. JAGIELNICK, B. HAMM, B. HALLIWELL, K. HENDRICK.

JUNIOR BASKETBALL

Having won their group with ease, Junior School have their eyes on the championship. A 3-point defeat was suffered at the hands of the Dentists in the first game of the season but the young Engineers won easily in the return engagement by an even 10 points. The rest of the schedule was dominated by Junior School, who ran up one of the highest scores of the year against an inexperienced Junior Meds team 73 to 4. The eight men comprising the team have the ability and fight necessary for a championship team and have only to keep up their teamwork to bring home the bacon. BOB HALLIWELL—"Jasper," a really smooth ball handler who hoops them with either hand.

ROY TREDGETT—A big lad who ties for high scoring honours with Halliwell.

BERT HAMM—A sure steady ball handler who makes every shot count.

JACK SWAN—A tall forward who seldom misses with his one-handed push shot.

"ANDY" ANDERSON—A scrappy forward from London who gets his share of points.

TOM HENNESSY—"Spike" is the best checker on the floor and is usually covering two men at once.

KEITH HENDRICK—An all-round player who fights harder than anyone on the team.

JOHN JAGIELNIK—"Chick" is an experienced man who is there when he is needed most.

W. J. BRANT,
Manager.

THIRD BASKETBALL TEAM



Left to Right: V. Booth, D. MacDonald, N. Volpe, P. Phillips, L. Farquhar, J. McKeenolds, P. Cardinal.

SCHOOL III BASKETBALL

This almost completely freshman group set out with lots of enthusiasm to show that team spirit and team play could bring real success in the little gym.

Nick Volpe, rugby quarter from East York and his side kick, Don McDonald from N.T.C.I. made real "try-hard" guards as well as driving through for good baskets. Lorne Farquhar, a Soph, threw 'em up and in and contributed well to the team play. Paul Phillips, from Riverdale, a spark defensively as well as offensively, always contributed scores.

In the taller class, Phil Cardinal brought some real experience from Glebe and his play-making, checking and scoring stood out. Clyde Fitch, left-handed hook-shot man from Windsor, played some fine games for the III's and when forced to retire, was replaced by Jack McReynolds, also of the Varsity squad. A Riverdale man, he has played and will play some really good basketball.

With the present schedule done, and some six wins placed against six losses, the boys are looking forward to applying some real effort to the finals. Win or lose, the fine spirit and unselfish play of this gang will be remembered.

VERNE BOOTH

B. W. and F.

Skule repeated its last year's performance of having more winning senior boxing and wrestling champions than any other faculty or college on the campus. Thus the Davidson cup was copped again.

The Junior Assault, held for the benefit of the beginners, brought forth promising talent especially Thornton and Punnett in the 155 pound class. Along with Dafoe, 145, these men represented School in the Junior Boxing Tournaments, and a victory was attained by Dafoe.

Smith, 135, got a bye in the Junior Wrestling to meet Drohan, 125, in the Senior meet. Drohan, fighting against a 17 pound weight advantage was very aggressive but the decision was awarded to Smith. In the 155 pound class, Sklar, a real veteran, was winner by a decision after one round overtime. In the heavy weight, McIntyre lost by a fall.

In the Senior boxing, Walt. Sharpe, 185, won by a bye, Dafoe and Thornton losing by a small margin.

With regard to next year, there is plenty of room for more fighters and it is hoped that interest in these sports will increase.

BILL ARTHURS,
WALT SHARPE,
Managers.

WOMEN'S ATHLETICS

Schoolwomen have an Athletic Group!

Seeing that there are not enough of us to form complete teams, it was suggested that the only way in which those interested could take part in Athletics, lay in the formation of combined teams with the girls of other faculties, who also could not form complete teams.

Basketball—Two Meds-S.P.S. teams were organized and entered the league, being known as "Meds-SPS", plain and simple, and "Meds-SPS Freshies." In the former, Betty Hill and Persis Hughes formed the "SPS" part of the team while in the latter, Betty Cowling, June Asselstine, and Ruthetta Kaplan were our representatives. The Freshie team fought hard in the face of stiff competition, but out of 5 games played, lost 5. The other team, however, won through to the finals, but lost the championship to P.H.E. Freshies. That was in December.

On February 17th, when Meds were hosts at Athletic Nite, the Meds-SPS team played an exhibition game against the aforesaid P.H.E. Freshies and beat them.

Hockey—Again a Meds-SPS combination was formed. Joan Robinson and Alice Ayer were the SPS members of the team. They went to several practices and entered the league, but although a good time was had by all, they did not meet with much success. Much credit is due to them, however, for their valiant effort.

Let's hope that the day is not far off when we can put out complete athletic teams of SPS women.

UNIVERSITY NAVAL TRAINING DIVISION

The University Naval Training Division of the University of Toronto was formed on the campus in the Spring of 1943 by Naval Service Headquarters to prepare students for eventual service in the Navy. Administration and discipline are under the Area Commanding Officer, Commander J. J. Connolly, R.C.N.V.R., the Captain of H.M.C.S. *York*. The Commanding Officer of the Division is Lieut. Cmdr. (SB) D. A. F. Robinson, R.C.N.V.R., and the Divisional Officers are Lieut. C. C. McGibbon, R.C.N.V.R., and Lieut. L. Hynes, R.C.N.V.R. The Division maintains a Ship's Office in Room "A" Hart House.

Students enrolled in the U.N.T.D. are attested on Divisional Strength of H.M.C.S. *York*. Those in Mechanical Engineering, Electrical Engineering, Engineering Physics and Mathematics and Physics are rated Stokers 2nd Class U.N.T.D. All others are rated Ordinary Seamen U.N.T.D. The strength of the Division this year is approximately 270 of whom about 150 are new entries. "Schoolmen" make up 74 of the 145 Seamen and 105 of the 135 stokers.

The U.N.T.D. training is made up of 110 hours during the academic year and two weeks of full time training on the East Coast in the Spring. There are two hours of lectures on Wednesday and Friday afternoons on the campus, and three hours of practical work at *York* on Saturday afternoons. The lectures are on Naval organization, customs and discipline, current history, operational tactics, and for seamen, navigation and chart work, and for stokers, engine room routine. These are given by the Commanding Officer and the Divisional Officers. The instruction at *York* is in squad and rifle drill, seamanship and signals and is given by the training staff of the ship.

The Division took part in the Remembrance Day Service and Parade on the campus on the 11th of November, in company with the C.O.T.C. and the U.A.S. Early in 1945 the Area Commanding Officer inspected the Division in a special Parade and March Past at *York*. The Division was highly complimented on its smart appearance and the keenness displayed by all hands. The final highlight of the season was the very successful "Navy Ball" held by the Division in the Concert Hall of the Royal York Hotel on the 11th of January. The Committee for this event was composed entirely of "Schoolmen."

All graduates and Third Year Stokers were interviewed by a Naval Technical Personnel Selection Board in January, 1945. The graduates are eligible for selection as technical officers. The Third Year men may be selected to take full time summer training as Acting 4th Class Artificers in Engine Room, Electrical or Radio branches. At the time of going to press the results of the Selection Board are not known.

The Division takes pride in the fact that some 140 of its members are now on active service with the R.C.N. as Executive Officers, Technical Officers and ratings. About fifty more will be joining them in the Spring from this year's strength. The Division looks forward to a continued vigorous life on the campus and in the Service.

NO. 3 UNIVERSITY AIR SQUADRON

The University of Toronto Squadron of the Royal Canadian Air Force was disbanded as of December 31, 1944, due to the closing of the training scheme of the Royal Canadian Air Force. The magnificent effort of the British Empire Training Plan which has been carried out in Canada since 1939 has proven a success beyond all calculations and in this the U.A.S. has played its part.

Some 400 men have passed through the ranks of the University Squadron during the past three years and of these roughly 65 per cent have gone on active service. No doubt the remaining 135 men on strength at December 31, 1944, will add to this in other arms of the service.

It is hoped to continue the squadron at the University after the war in such a manner that personnel will be able to take a full flying course during the summer months thus qualifying as reserve officers available when required.

The squadron headquarters during the past year was made up as follows:

Commanding Officer Wing Command T. R. Loudon, V.D.

Adjutants Flight Lieutenants R. D. Douglas and
F. R. MacNamara

Squadron Disciplinarians . . . W.O. II F. W. Downey, and
Sergeant R. Keys

Orderly Room Clerk Flight Sergeant J. W. Skelly

UNIVERSITY OF TORONTO CONTINGENT CANADIAN OFFICERS TRAINING CORPS

Another milestone in the history of the Contingent was passed on January 9th, 1945, when after thirty-seven years military service, Lieut.-Col. H. H. Madill, V.D., m.s.c., Commanding Officer of the Contingent retired and was succeeded by Lieut.-Col. W. S. Wilson, E.D., formerly 2 i/c of the Contingent and Commanding Officer of the Second Battalion.

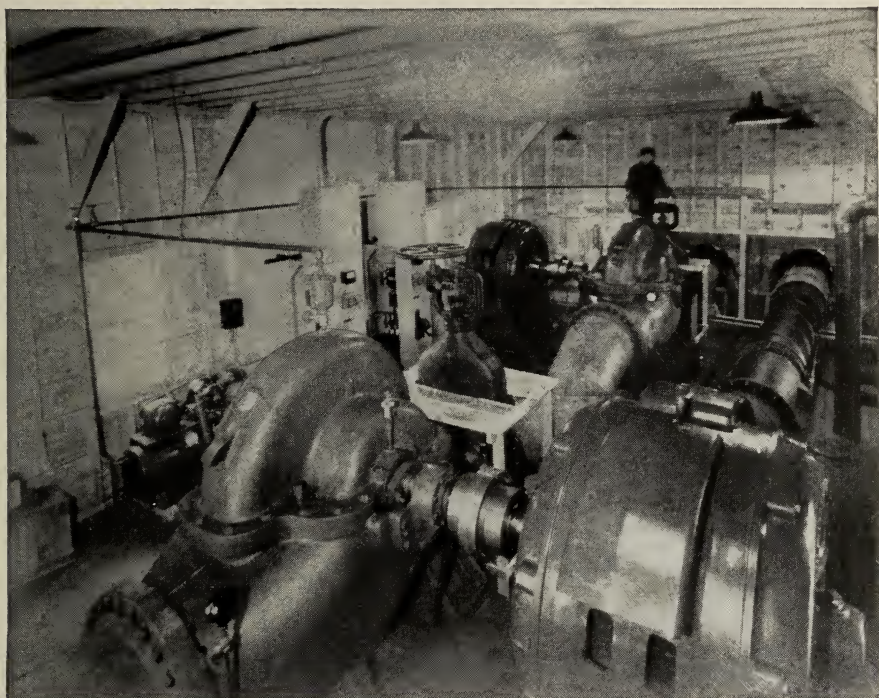
It is gratifying to Engineers that the honour of commanding this great contingent has fallen on the shoulders of another "School Man". Lieut.-Col. W. S. Wilson, E.D., Assistant Dean and Secretary of the Faculty of Applied Science and Engineering has shared with Lieut.-Col. Madill the heavy burden of Administration and Training of the Contingent during these war years.

The two weeks' camp at Niagara-on-the-Lake, June 4th to June 17th, was extremely purposeful and interesting. The unit was furnished with adequate modern equipment. The A.S.C. Wing with 35 vehicles proceeded from Toronto to Niagara-on-the-Lake in convoy transporting the men's kit bags and camp equipment. During camp these vehicles and many others were distributed to both battalions greatly facilitating the carrying out of the training programme. Ninety M.T. drivers were qualified.

The Basic Training of the Second Battalion was enlivened during the second week by a night route march and an overnight trip to the Welland Canal Area. The scheme included amovement by road, route marching plus M.T. movement by convoy, all timed to a split second. All ranks received valuable experience in map using, embussing and debussing and other practical lessons in M.T. March Discipline.

Training during the current season 1944-45 has gone along in full swing. Fourteen engineering cadets who trained during the summer at R.C. Signals T.C., R.C.E.M.E. T.C. at Barriefield and R.C.E. T.C. at Petawawa were appointed Officers in the Contingent and are passing on to the other members of the Unit the benefit of four months intensive training in the Active Army. Similar courses are being conducted this year.

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NOTES ON MILITARY WRITING

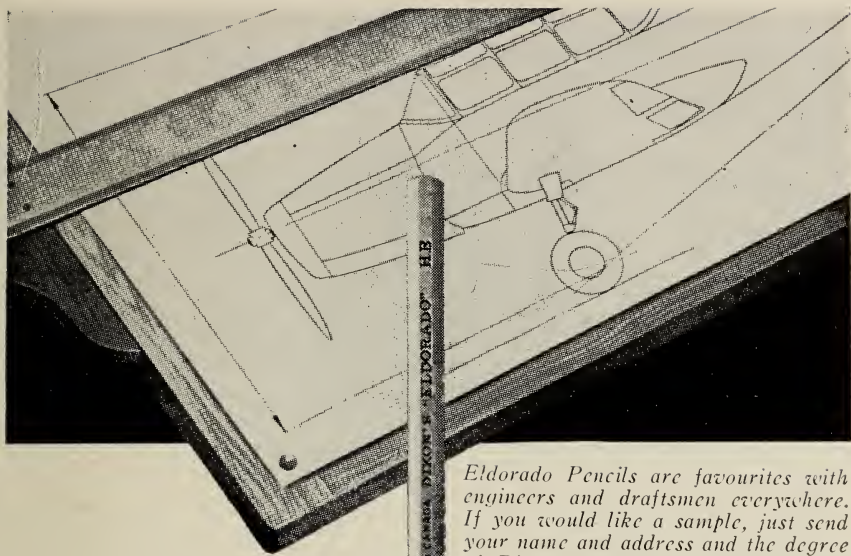
by **Major W. S. Wallace**

University of Toronto Contingent, C.O.T.C.

When No. 1 Canadian Army Course was launched at the University of Toronto in the autumn of 1942, one of the subjects laid down in the Curriculum was "Military Writing". This subject called for one hour a week during the academic year, and was intended to be the counterpart of the courses in "Freshman English" frequently offered in science courses, but with particular emphasis on English for military purposes.

The task of giving instruction in this course was assigned to Major W. S. Wallace, the Librarian of the University of Toronto. In giving the course, Major Wallace found that he was handicapped by the absence of any text-book in the subject, and he therefore deemed it his duty to put down on paper the result of his pioneer efforts—if only to provide what might be described as a series of precis. \$1.00 postpaid.

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Yuba River Flood Control Channels Built During Gold Dredging Operation



Placer dredging at times can be undertaken in areas where levees or channels for flood control might be of definite value to the community. Such was the case on the Yuba River about twelve miles above Marysville, California. Two 18 cu. ft. Yubas were equipped with double stackers discharging at right angles to the dredges. These dredges built up tailings piles in parallel rows about 400 ft. apart and two deep channels, about five miles long, were constructed as the gold dredging progressed. After the channels were finished the voids in the new rock levees soon filled with silt and sand. Results were beneficial to all down-stream communities, especially Marysville, since flood waters are under

better control. Actually the Yuba River still rises in these channels after it starts subsiding at points downstream.

This particular work was done twenty or more years ago in cooperation with U.S. Engineers. Later the special stackers were removed and single stackers for standard dredging have been used on the dredges since. If your plans include dredging for gold, platinum, or tin, perhaps there is some special feature or problem to be considered. Every dredge to operate successfully must be designed to meet the conditions of its ground. Let Yuba help by drawing upon its specialized experience of many years.

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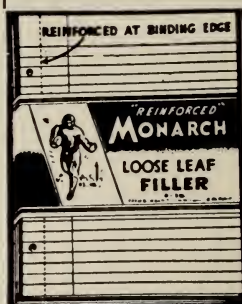
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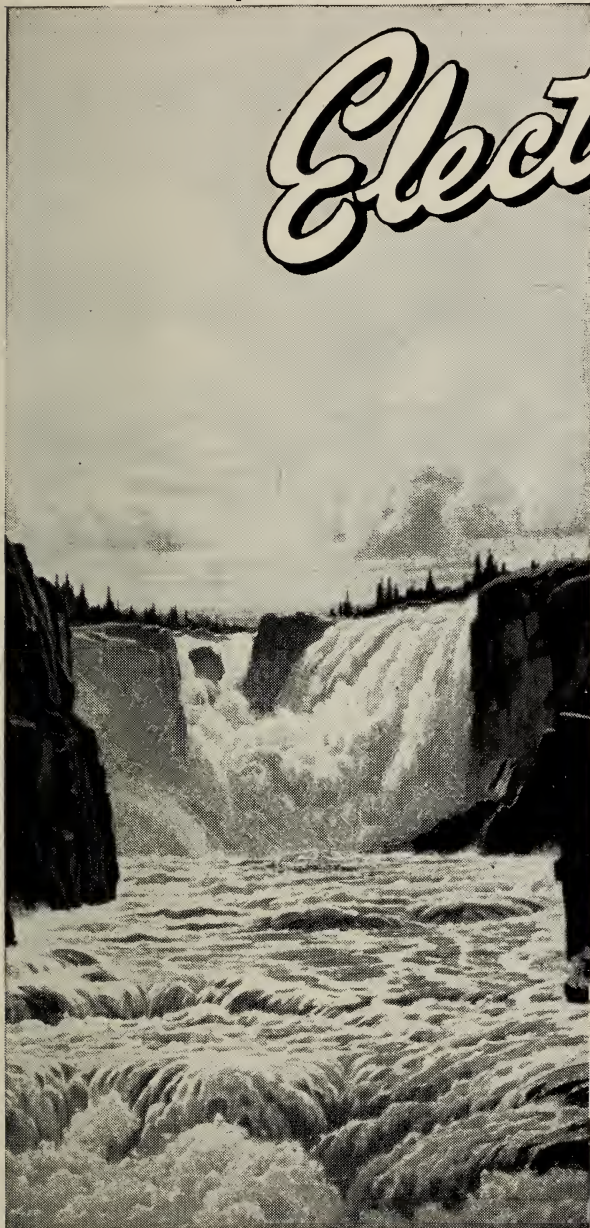
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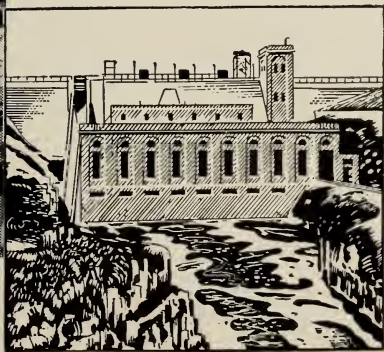
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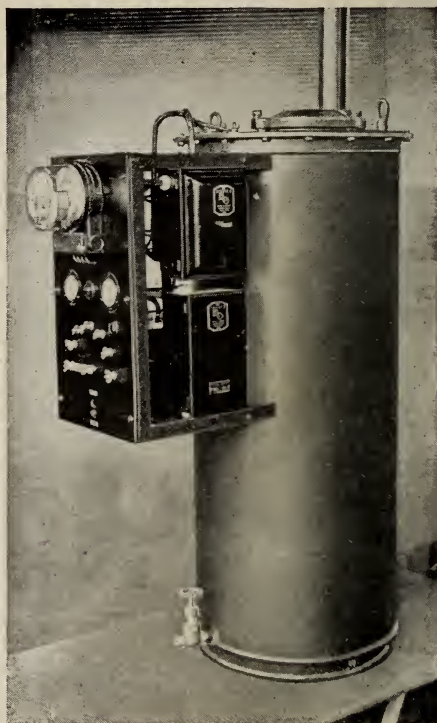
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